



Higher Level Skills in Tees Valley

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Key Messages

- **Communication/Relationships**

- What are higher level skills? – this message needs to be clearly articulated as there is currently much confusion and misperception
- Lines of communication between all partners need to be plain, visible and nurtured
- HEIs must translate their language – to ensure mutual understanding
- Progression routes need to be straightforward, effective and promoted
- An ongoing dialogue is crucial to future developments – research responses were rich (and real) – important to foster more of this
- This dialogue needs to be sustainable – not with a project, short-term, funded mindset
- Training Suppliers must be responsive – but demand-led initiatives need to be strategically thought through – not knee-jerk and/or profit-motivated
- Businesses are driven by their business plans and budgets - HEIs must build relationships which enable ongoing involvement

- **21st Century Workforce**

- Society is changing rapidly (and with it lives and jobs)
- It is crucial to equip the workforce with the skills needed for the future
- Employers, employees and HE institutions need to be changeable, adaptable and pre-emptive
- Tees Valley must be equipped to maximise on new opportunities, tying them where possible to existing strengths, and not be allowed to decline but rather strive for excellence in growing industries
- A high percentage of business respondents commented on the need to diversify to survive – they need *new* skills, as well as improving the ones they have
- The ageing workforce is an important factor – but there is some evidence of best practice around mentoring
- Employees need up-skilling to progress up the work ladder, this also creates room in the middle and lower levels for new employees
- Focussed up-skilling impacts on competitiveness, innovation, creativity and productivity - thus creating more job opportunities

- Discussion around improving participation of future employees is crucial to the debate – development of non traditional and alternative routes into higher education is essential
- Information Advice & Guidance needs to be of high quality (and easily accessible) from the youngest age to ensure that an ethos of lifelong learning and career development is fostered in young people
- There are distinctive (and well documented) character traits and attitudes which differ between generations and it is well worth considering these
- In addition to subject-specific skills, graduates need transferable/ generic/employability skills – these were the most requested by interviewees – for example Leadership & Management
- Higher level skills develop the whole person and facilitate the achievement of personal and professional aims – they support the fulfilling of potential and facilitate social justice

- **Bigger (and Balanced) Picture**

- Any Tees Valley skills strategy needs to be aligned with the national skills strategy and local, regional, national and international plans and priorities
- Huge amount of publications have focused on skills issues in the last 12 months – the key documents are précised in this report
- Any Tees Valley skills strategy must be part of the bigger picture in order to ensure that the area can monopolise on opportunities (including funding) and therefore survive and prosper
- The other key sectors in the Tees Valley should also be considered
- Any Tees Valley skills strategy needs to pay due attention to industries/sectors/jobs that are emerging or that do not exist yet
- Regular gathering of labour market intelligence is needed to ensure that any skills strategy for the Tees Valley evolves and stays relevant

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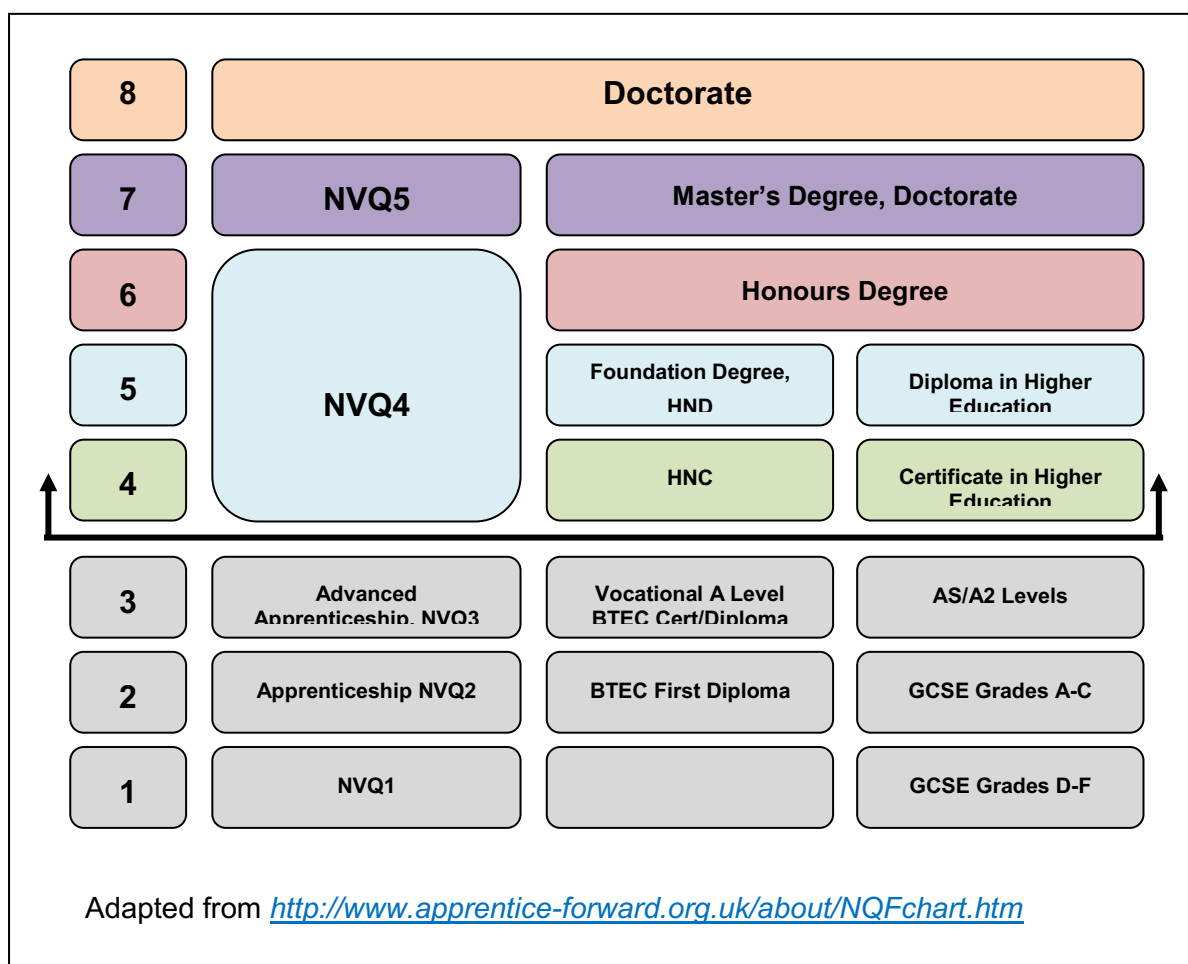
Introduction

Higher level skills are those achieved or developed through higher education (HE) level study and/or activity. These skills may be attained via a formal programme of study, through experience within the workplace, or by a combination of the two. They might represent a complete degree, post graduate certificate, diploma, masters or doctorate, or alternatively a small part of one of these qualifications. They are also professional and vocational qualifications at level 4 and above, perhaps facilitated through an industry or trade body, for example accountancy and law, and these programmes of study also represent routes to higher level skills.

Higher level skills can be acquired through long, short or distance learning opportunities and do not have to lead to a qualification. They are offered by universities, further education colleges, private providers and in-house training facilities. Higher level skills can also be acquired through experience; by actually undertaking tasks. This experiential learning can then be awarded credit by most Higher Education Institutions (HEIs). This credit gives the holder the chance to gain advanced standing, so that it counts towards certain relevant qualifications. Within existing UK academic credit systems credit is described in terms of level. HE level awards range from Level 4 (first year undergraduate) to Level 8 (doctorate or equivalent), therefore higher level skills are HE Level 4 - 8. HEIs' individual level descriptors are developed in line with, and informed by, the Framework for Higher Education Qualifications

(<http://www.qaa.ac.uk/academicinfrastructure/fheq/EWNI/default.asp#framework>) and its component 'qualification descriptors'.

Figure 1: Qualification Chart



In 2009 the Government launched a number of key documents focussed on building Britain's future, in particular its economy. A common theme running through these documents is the focus on future jobs, key sectors and the skills required (most notably higher level skills). There is a recognition of the importance of regions and sub-regions in building the UK's economic prosperity. Moreover the publications acknowledge the different economic challenges regions face. The Government publication *New Industry, New Jobs: Building Britain's Future* states 'Each region has a unique set of challenges and capabilities, and understanding of these is critical to effective policy delivery, as is rapid feedback to Government from delivery partners' (BERR 2009:26).

This same report further states that, 'Delivery at local and city region levels should also meet regional and national strategies and priorities (...) But delivery must also deliver national priorities in a regional context' (BERR 2009:26), through such things as local and multi-area agreements and Employment and Skills Boards. Whilst keeping this need for a national, and indeed global, strategic 'fit' in mind the main purpose of this report is to particularly focus on the Tees Valley, its strengths and its needs. Following the Government publication of the *Framework for City-Regions* (2005) Tees Valley Unlimited (TVU) published the *Tees Valley City Region Business Case* (2006) and has, as part of this, been developing a long term strategy to improve the sub-region's economic performance and to usefully inform the 'bigger picture'.

In recent years significant research into the Tees Valley economy has been undertaken and various strategic documents produced. The prevalence of low skills and average levels of employment in the Tees Valley are, therefore, well documented. Placed in a national context the GVA of the sub-region is 78% of the national average, the industrial composition is heavily manufacturing based, with skills concentrated at the lower end of the skills spectrum. For this reason TVU has set itself the ambitious target of growing the Tees Valley economy faster than the UK economy. Developing higher level skills in Tees Valley is integral to this as it advances the economy by naturally creating an increase in opportunities at the lower skills level of the economy. That is to say more jobs for people with lower level skills will become available as more people are developed to work to their full potential. In their 2009-2012 business plan TVU prioritised the development of a higher level skills strategy. The Government has now (November 2009) published a National Skills Strategy – *Skills for Growth* (BIS 2009 [A](#)), which articulates the future development of skills in the UK. The purpose therefore, of this report (undertaken by Teesside University, on behalf of Tees Valley Unlimited) is not to duplicate effort but to look at higher level skills in Tees Valley, specifically set this within the national context and develop some ideas around taking forward the notion of a higher level skills strategy/framework in the sub-region. Key to this is how to move the higher level skills agenda forward so that sub-regional priorities are strategically aligned with the Government's national priorities and regional priorities, whilst at the same time ensuring that a Tees Valley identity is maintained and promoted.

Focussing on some of the key economic sectors in Tees Valley, namely **process industries/energy/advanced engineering, logistics and digital multi media** the study had three main objectives:

1. To assess the demand for higher level skills in key economic sectors of Tees Valley.
2. To measure demand against existing provision, identifying how provision meets demand and where gaps exist.
3. To develop a key reference document for the Tees Valley as part of the case to the Department for Business, Innovation and Skills (BIS) for the devolution of funding to the Tees Valley Employment and Skills Board.

In order to gather relevant information to usefully feed into the creation of a higher level skills strategy a number of activities have been undertaken. Given the significant, and growing, amount of literature relating to higher level skills and future economic growth one of the first tasks was to undertake an extensive review of appropriate national, regional and sector-specific literature. Due to the proliferation of such documentation and ongoing developments in relation to higher level skills this review has been a continual process throughout the formation of this report. Therefore rather than being a snapshot of publications at a certain time, the literature review has been an ever evolving aspect of this work (see [appendix 1](#) for a précis of key documents). This review was contextualised by interviews with diverse companies, providers and agencies and a questionnaire circulated amongst companies identified as working within the key sectors (see [appendix 2](#) for sample questions and company/sector breakdown). Between the interviews and questionnaire responses much useful quantitative and qualitative data was gathered. This is interwoven into the narrative but also interspersed throughout the report in orange text boxes.

Section One delves into the economy of the Tees Valley sub-region; from its origins to current characteristics. **Section Two** then looks at higher level skills in the context of national and regional policies. Following on from this **Section Three** presents an analysis of skills currently provided in the region, along with actual demand and likely future demand. This includes the data from a sector-specific recently circulated questionnaire. Taking all this previous analysis into account **Section Four** considers how best to move the higher level skills agenda forward in the sub-region. The section presents recommendations for action and credible enhancements to satisfy identified gaps and align a sub-regional higher level skills strategy with national priorities and the Framework for Higher Education. Case studies from local companies and providers are interspersed throughout the document to highlight areas of good practice.

Section 1: Understanding Tees Valley

In order to fully comprehend the skills landscape in Tees Valley it is important to understand the sub-region itself. Since 2006 Tees Valley and the adjoining areas have been defined as a city region. The economic base for the Tees Valley city region is the five boroughs of Darlington, Hartlepool, Middlesbrough, Redcar and Cleveland and Stockton. Its 'sphere of influence' reaches as far as Durham, Northallerton, Richmond and Whitby. Over a number of years the population of the sub-region has been increasing and is now around 662,600 (1/4 of the North East region). Furthermore around 1 million people live within half an hour from the heart of the sub-region and around 2.7 million people within an hour (TVU, 2009). Tees Valley has evolved from a region characterised by population losses and outward migration to one of population increases and inward migration.

The Tees Valley is renowned for its iron and steel, heavy engineering and chemicals. By the mid 1970s these traditional industries were responsible for ensuring that the GDP of Teesside was the third highest in the country behind London and Aberdeen. However, long-term economic and social problems have resulted in levels of social deprivation in the Tees Valley which are significantly higher than the national average. As a result Tees Valley is often characterised as having low skills and low productivity. In terms of productivity the GVA of the sub-region is 75% of the national average and at 6.3% unemployment rates remain above the regional (5.3%) and national (4.1%) rates of unemployment.

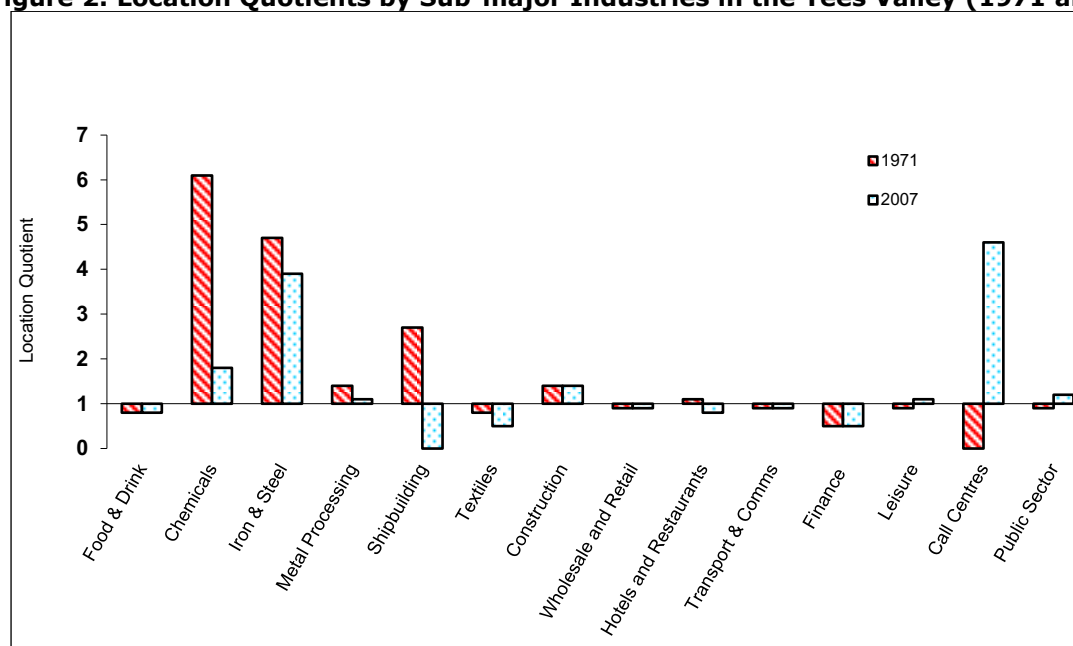
External influences such as the global recession have not helped to ease the situation in the sub-region. As a consequence of the recession there have been job losses, businesses closing and some industries such as steel and chemicals becoming vulnerable. However the impact of the recession on Tees Valley has been mixed and as the draft Economic Assessment (TVU, 2009) recognises there are some positive indicators:

- Recent growth in the number of new businesses (growing faster than the national average)
- Opportunities offered through energy efficiency
- The workforce are more skilled and the skills gap between the sub-regional and national has narrowed

Industrial Profile

Since the 1970s the industrial profile of the Tees Valley economy has undergone massive restructuring, exemplified by an enormous decline in manufacturing (around 10,000 job losses) and a doubling of employment in the service sector. Consequently the region has also seen an increase in women in the workforce and more flexible/part time working. Now the industrial composition of the sub-region is more closely aligned to the national perspective, although manufacturing still represents a larger proportion of the workforce in Tees Valley than nationally. Moreover, as figure 1 shows, there are still areas where the sub-region has greater specialism than nationally.

Figure 2: Location Quotients by Sub-major Industries in the Tees Valley (1971 and 2007)



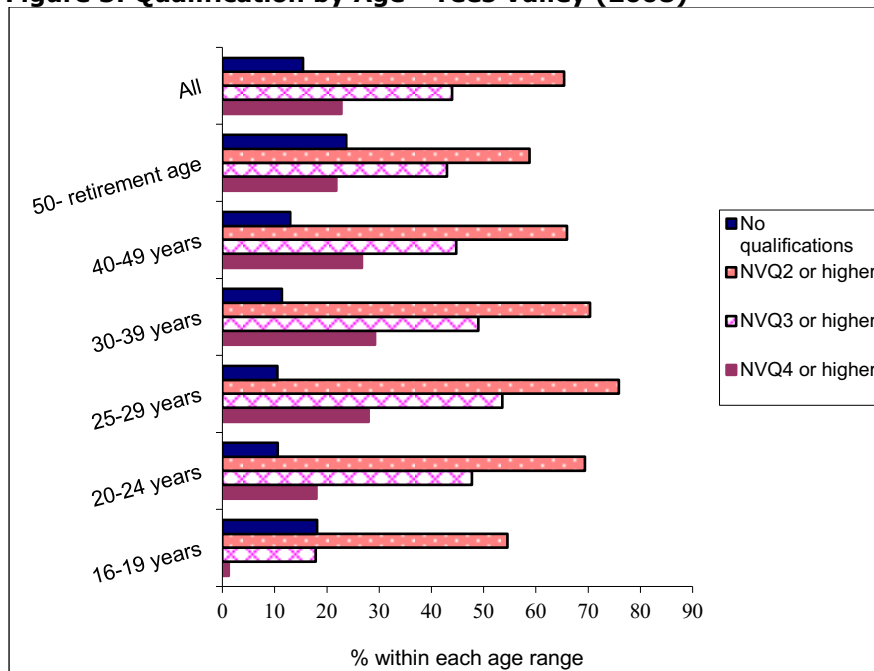
Source: Tees Valley Economic Assessment, TVU (2009)

Skills

Knowledge economy is a phrase often used to describe economies in which the use of knowledge is the main driver of economic growth, wealth creation, and employment. The growth of the knowledge economy has resulted in the need for increased numbers of higher level skills; however low skills and low skilled jobs continue to be prevalent in the sub-region. Progress has been made in relation to skills and the gap between the sub-regional and national figures have narrowed (mainly at level 2 and 3). Acquisition of skills above level 3 and participation in HE continue to be a concern. In terms of level 4 qualifications only 22.8% of the working age population are qualified to level 4 compared with 23.9% in the North East and 29% nationally.

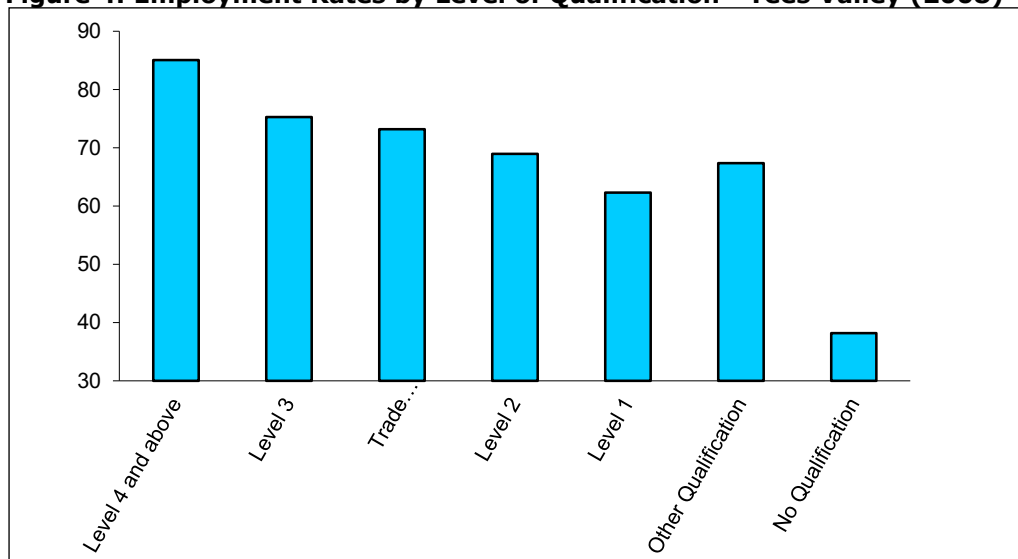
Higher level skills underpin our knowledge economy and are vital to renewing it. People with higher level skills will be able to access the best, and more, jobs (BIS 2009 B:3). The correlation between qualifications and employment is evidenced in the draft Economic Assessment (TVU, 2009), which indicates that 85% of people in the sub-region with level 4 qualifications are employed compared with only 38% of individuals with no qualifications (see figure 4).

Figure 3: Qualification by Age - Tees Valley (2008)



Source: Tees Valley Economic Assessment, TVU (2009)

Figure 4: Employment Rates by Level of Qualification - Tees Valley (2008)



Source: Tees Valley Economic Assessment, TVU (2009)

Looking at skills within the workforce it is clear that Tees Valley is, at present, predominantly a low-skilled economy. This is confirmed by looking at the breakdown of occupations across the Tees Valley. The number of people in professional, managerial and associate technical jobs is greater nationally than in the sub-region. However the percentage of people working in skilled jobs, process plant and machine operatives and elementary occupations is greater in Tees Valley than nationally (see table 1).

Table 1: Percentage (all) in Employment by Occupation (year to end of March 2009)

	% of residents employed in						
	Professional Managers & senior and so on	Associate & technical	Admin & secretarial	Skilled trades	Personal services & sales	Process, plant & machine ops and so on	Elementary and other occupations and so on
Darlington	28.1	14.5	10.7	10.2	18.9	6	10.8
Hartlepool	23	12.3	9.2	11.8	21	9.4	11.8
M'brough	20.1	10.3	12.4	12.9	21.2	10.3	12.3
Redcar & Cleveland	23.4	12.5	12.1	13.2	16.5	9.8	11.8
Stockton-on-Tees	25	12.7	12.1	10.2	18.5	8.7	12.5
Tees Valley	23.9	12.4	11.6	11.6	19	8.9	11.9
North East	24.4	12.7	11.9	11.1	18.1	8.8	12.6
Great Britain	28.7	14.6	11.4	10.7	15.8	7	11.3

Source: Tees Valley Joint Strategy Unit Statistics (2009)

Some improvement is being made in relation to higher level skills due to the work of Further Education Colleges and the Universities (and campuses) in the Tees Valley. In 2008/09 Teesside University had 27,954 students, of whom 17,603 were from the North East, whilst Durham University (Stockton campus) had around 2,000 undergraduate and 1,000 postgraduate students. There is however still a significant amount of work required.

Looking ahead the draft Economic Assessment (TVU, 2009) has highlighted a number of strengths, weaknesses, opportunities and threats for the region (the full SWOT analysis is shown in [appendix 3](#)). Strengths include excellent specialist training providers and good availability of skilled labour whilst opportunities are highlighted as continued growth in the low carbon economy, the digital economy and other key industries. On the other hand the polycentric nature of the Tees Valley, an ageing population and the under-representation of higher level skills are seen as weaknesses. The draft Economic Assessment (TVU, 2009) provides a sound base from which to move forward, enabling identified weaknesses and threats to be counteracted with positive interventions. On an upbeat note the Tees Valley economy has, within a global recession, remained relatively buoyant and planned investment is still going ahead. The economic assets and opportunities identified in the assessment are a vital foundation upon which to build the Tees Valley economy in the future.

In carrying out analysis of the sub region's economy the Tees Valley Economic Assessment (TVU, 2009) highlights key sectors that are either important now or growth areas, including:

- Chemicals
- Public Sector
- Offshore Oil and Gas
- Design Engineering
- Contact Centres
- Professional and Business Services
- Logistics
- Digital and Creative

The remainder of this report looks at some of these key sectors in more detail, whilst acknowledging that there are also other important sectors in the sub-region with skills and employment needs.

Section 2: The Bigger Picture

Whilst this research has focussed on the skills landscape within the Tees Valley, and indeed will conclude with recommendations specifically for this important geographical area, it has been undertaken within the context of the global and national skills, employment and financial agendas. It is important that whatever is put in place for the Tees Valley is appropriate, informed and adaptable and furthermore, works effectively and intelligently with existing (and future) initiatives and strategies. This research has given particular attention to several key sectors: Advanced Engineering; Logistics; Digital media; Energy and the Process Industries and in the same way that the skills needs of the Tees Valley must be considered within a larger framework (the skills needs of the rest of the UK), so too must the specific needs of key sectors be held within the scenario of the other important sectors which make up the diverse mix of workforces within the Tees Valley.

The skills needs of the UK workforce have prompted intense debate within companies, universities, schools, colleges and other agencies, but especially amongst government ministers and departments. In order to place some of the huge amounts of valid and current information within a Tees Valley context this report takes several key national research publications and summarises them alongside important local policy documents ([see appendix 1](#)). This report focuses upon higher level skills (Level 4 and above) as it is especially important to ensure that the UK workforce is a highly skilled one. If it is not it cannot possibly compete internationally. As well as the ongoing need for highly employable graduates (to fill skills shortage areas, but also to help businesses flourish generally), it will look closely at skills gaps – that is gaps within the skills capabilities of individual employees. It is by addressing these gaps effectively that employees will be equipped to operate at their fullest capacity in the workplace and therefore make the best contribution possible to their company's productivity and development (even survival). On a personal level it is also far more rewarding to be a well rounded and developed individual. Striving to meet our fullest potential helps us to become capable of leading fulfilling private and professional lives.

Investigations into the kinds of training and education interventions which will make this happen suggest that HEIs and training providers must supply courses which encompass both subject-specific and more generic skills and knowledge. These awards need to vary in shape and size and to be flexible in terms of mode and place of delivery. They do not always need to be a qualification which carries academic credit. For example in some instances the best solution may well be a full degree in a very specific subject, but this might be delivered mostly on-line or on an HEI's campus outside of working hours (evenings and weekends). Some (or all) of the delivery could be at the student's place of work. For other skills needs the best solution might be a short course, maybe one or two modules with content which may well be quite generic (the precise activities and input will contextualise the module's aims for the sector in question) – for example project management skills or commercial awareness. These modules could be delivered at a university or college, in the workplace, or at a private training company's own premises. Teesside's Summer University programme is an excellent example of innovative delivery of short courses.

(http://www.tees.ac.uk/sections/parttime/summer_courses.cfm).

Work-Based Learning Programme

Work-based Studies programmes at HE level are often the answer for employers who require a flexible solution to their staff development issues. These programmes tend to work around a central framework and have innovative features including:

- The acknowledgement of skills & knowledge gained at work - students use their job role to provide/inform the curriculum
- They encourage the negotiation of title, and content, of award
- They maximise time (1) – by offering Accredited Prior Learning (APL) credit and potentially advanced standing (see [appendix 6](#) for an explanation of APL), (2) - by assisting with workplace continuing professional development (CPD) and projects
- They combine education and development – for the 'real' world
- They facilitate progression routes to various HE awards
- Learning takes place at diverse locations, not just in HEIs - there are off- campus, out of hours and electronic options
- Compulsory modules and campus attendance are kept to a minimum
- Programmes operate beyond the academic calendar with multiple enrolments and modules offered more frequently – even on demand
- The timeframes in which to complete awards is longer and looser
- They offer generic skills modules – invaluable whatever the student's job
- They support reflective practice and self-analysis
- They offer innovative methods of learning, teaching and assessment

Graduates of work-based studies programmes frequently state that they could never have undertaken HE level study, without the opportunity such a responsive route offered them:

"I could never have obtained my degree without a scheme like this. I left school with no qualifications and never felt like I could belong at university. The work-based studies programme proved me wrong! It is so flexible, it meant I could attend sessions and tutorials after work. I also completed a lot of the assignments at home, at work and in the library and based all of my major submissions on work tasks which I would have had to complete as part of my job, even if I wasn't studying" (Work-Based Learning Student)

For further information see:

http://www.tees.ac.uk/sections/parttime/work_based_studies.cfm

Key Research Findings

- The sectors differ quite widely and all have varying messages about their companies, their employees and their aspirations for the future
- Despite sectoral differences there were many discernable common themes amongst the respondents:
 - Nearly all the respondents saw the need to diversify and grow their business offer in order to survive
 - Generic subjects like leadership and management, commercial awareness and project management skills were seen as vital
 - A large proportion of respondents want graduates with more workplace related skills
- Higher level skills are often only given importance or status within the company if they were included in an overall training plan (enforcing the crucial nature of HEIs and other skill providers building meaningful and ongoing relationships with businesses)
- A key role of an education provider is to explain coherently what higher level skills actually are and what they can do for an employee's potential and therefore ultimately for that employer's success

A respondent from the advanced engineering sector felt that:

- "The sector needs more on the job qualifications where the job you are doing can be assessed. More half-day and one-day refresher courses on specific topics where some form of certificated attendance is available"

see appendix 2

The inherent complexity of this debate is further intensified by a number of major influences, firstly, the current economic climate - when resources are tight training at whatever level is often the first thing to be cut (although some respondents did state a need/intention to train more, not less in times of recession), cuts to HE funding have already been made and further reductions anticipated. The second influence is qualification reform – the new Qualifications and Credit Framework has only just been introduced and with further alterations expected over 2010 implications for training are not clear yet. The third major influence on the debate is the speed of 21st century developments – it is understandable when employers are cautious about investing time and money into skills which may be superseded. It seems obvious that due to the level and sophistication of consumer demand it will only become more vital than ever for the future UK workforce to be equipped with higher level skills; however, many recent policy documents point out the necessity (but difficulty) in equipping the workforce with the skills they will need to succeed in industries and job roles that sometimes don't even exist yet. Similarly there is an emphasis on producing graduates with the skills which make them capable of changing, adapting and perhaps never working in the occupation they thought they would.

In 2009 BIS published *Skills for Growth: The National Skills Strategy* (2009^[A]), a national strategy intended to address weaknesses in the UK skills base (particularly intermediate skills), 'Our economic recovery and long term prosperity will require people who are not only highly skilled but who have the

right skills appropriate to the changing economy' (BIS 2009^A:4). This strategy goes beyond simply increasing the number of people with skills; it sets out plans for developing a system which 'delivers skills with economic value' (BIS 2009^A:7). The targets and ambitions detailed in *Skills for Growth* demonstrate clear intent to broaden the Leitch targets and develop an exceptional national skills system. The strategy discusses:

- Promoting skills for economic prosperity
- Expanding apprenticeships
- Ensuring that the system responds to demand from business
- Empowering adults to equip themselves for future jobs
- Improving quality of provision
- Achieving 40% of the working population to be qualified to Level 4 or above by 2020

The strategy also spells out the role of Regional Development Agencies, sub-regions and city regions in developing regional skills strategies. It is vital that whatever is planned for the Tees Valley region works alongside and complements these plans for the wider UK's skills needs, whilst also placing the region in a strong position to monopolise on UK wide initiatives and funding opportunities. Although the Government are making decisions and plans which will affect the whole country there will also be specialised areas, sectors and circumstances unique to the Tees Valley which must not be forgotten or lost amongst policy decisions that may disadvantage them. A powerful case must be built for developing and nurturing unique strengths and characteristics despite challenging economic circumstances.

Section 3: Skills in the Tees Valley

Supply

Key Research Findings

- **777** people (from 31 companies) were qualified at level 4 and above
- **60%** of employees with higher level skills are at level 4 or level 5
- The most common qualifications were Bachelor Degrees (BA/BSC), Higher National Certificates (HNCs) and Certificates of HE (Cert HE)
- In total **1170** employees (from 29 companies) are estimated to be operating at a higher level but without formal qualifications
- **416** people currently employed in these companies are estimated to be qualified to level 3 and capable of progressing to level 4

Respondents felt that:

- "Most of the required training activities are already available, however they need adjustments to be of value to the business" (*advanced engineering*)
- "The current availability of training in the geographical area is of a high standard" (*petrochemicals*)

see appendix 2

Universities and FE Colleges are established as key to developing the central roles of teaching, research and knowledge exchange within any society hoping to thrive economically. HEIs inspire and motivate expansion by generating ideas and by working in partnership with businesses to help them develop and make the best use of ideas. As the global market becomes increasingly sophisticated HEIs will play an essential role in enabling a growing percentage of the workforce to adapt to rapidly changing demands by equipping them with the skills and knowledge necessary to respond to changes in a positive and flexible way. This focus on autonomous learning is inherent to Higher Education level study and will help learners to become the kind of individuals the economy needs most, those who are capable of responding to changes which are hard to predict, and adapting to working successfully in industries which don't necessarily exist; 'we require a skills system that not only responds to demand but is also able to anticipate future growth in the economy' (BERR 2009:15). Private training providers are also important in this system and like universities and colleges they should continue to work with businesses to strengthen these relationships and continue to develop flexible and forward looking training which encourages the future and the current workforce to become adaptable and innovative.

Key Research Findings

- A small percentage of respondents named private training companies, who deal with specialist subjects/areas, as their first choice of training provider
- Sometimes this was the only choice available to them and therefore an important source
- There is potential for such courses to be accredited and HEIs and private providers can work together to achieve this
- Adding HE level credit to existing training was seen as added-value by employees, and some employers, as it encourages progression and ongoing personal/professional development resulting in a motivated workforce and dynamic organisation

see appendix 2

In Tees Valley there are currently six Further Education colleges, two universities and numerous private training providers, all able to deliver higher level training. The available offer ranges from sector/company specific training to short modules, professional certificates, foundation degrees, degrees and postgraduate courses. The Tees Valley Higher Education Business Partnership (HEBP) is a long standing affiliation between Teesside University; Middlesbrough College; Stockton Riverside College; Redcar and Cleveland College; Darlington College and Hartlepool College of Further Education (examples of HEBP provision can be found in [appendix 4](#)). These partners work closely to co-ordinate the development and management of vocational routes from Level 3 qualifications into HE programmes. This activity increases access to, and progression within higher education in the Tees Valley by jointly developing and delivering programmes which are HE level, or prepare students for HE level study. All of the FE partners have an HE strategy which sets out their aims and objectives in relation to HE provision.

In addition to specific training courses Knowledge Transfer Partnerships (KTPs) are becoming increasingly popular as a means of gaining experience and knowledge within a business. KTPs and Collaborative Innovation Partnerships (CIPs) are partnerships between a university, a graduate and the employer. The process involves graduates working in companies alongside a team of specialist experts from a university; technical expertise, research and innovation from the specialists will be transferred via the graduate.

Flexible in length from six months to three years, CIPs and KTPs help companies to:

- Increase their competitiveness
- Increase their productivity
- Increase their annual profit
- Help them make better use of knowledge, technology and skills

The business performance outputs vary from one KTP to another but generally it is expected that one KTP would lead to:

- An increase of over £220,000 in annual profits before tax
- The creation of three new jobs

- An increase in the skills of existing staff

OneDoor – Tees Valley Workforce Development Network



OneDoor has been formed from the Higher Education Business Partnership (HEBP) in recognition of the growing need to respond effectively to employers' higher level skills needs. All the partners have track records for working with employers and for collaborating to develop higher education provision.

The group's collective message to employers is more powerful and useful than fragmented individual offerings; providing a coherent package of higher level skills, at a number of locations and across the entire range of an employer's needs, is a compelling offer. In order to develop appropriate support **OneDoor** asked 50 local employers about:

- Their business challenges
- The barriers to them considering higher level skills
- The barriers to them engaging with HEIs in the area

OneDoor gives employers a single point of contact, offering them access to the collective talents of all partners in the network from a single enquiry; it presents a seamless face and utilises a team of Teesside University Account Managers (**see appendix 5**) to handle enquiries as the 'honest broker'. **OneDoor** also provides employers with access to knowledge transfer and student placement schemes, as well as training from all of the partners. Of course, individual partners are still free to develop their own courses and provision, and, as well as promoting collectively under the **OneDoor** banner, each individual partner can also badge their own provision as 'part of **OneDoor**'.

The **OneDoor** helpline number is **0845 4630101** and for more information visit the website <http://www.onedoor.co.uk> or download the brochure:

<http://www.onedoor.co.uk/assets/Uploads/pdfs/OneDoor-brochure.pdf>

Teesside Manufacturing Centre – Knowledge Transfer

Teesside Manufacturing Centre (TMC) is a business support unit within the School of Science and Engineering at Teesside University. The centre offers businesses a Total Enterprise Integration service, driven by improved use of systems and technologies, organisational efficiencies and more effective working practices.

Collaboration with companies ranges from two day appraisals to engagements lasting two years or more, and covers knowledge transfer consultancy alongside workforce development. Over the past 8 years TMC have developed a holistic approach known as Totally Integrated Enterprise (TIE) which focuses on business-wide improvements, integration across the organisation, and systems implementation, facilitating the total change and improvement required to embed best practices and systems effectively and efficiently rather than point solutions and piecemeal initiatives.

The TMC methodology, known as 'CHI', encapsulates three phases:

- Establishing a **Consensus** in the management team, as to the aims and the priorities of the change and improvement programme
- **Homing in** to organisational requirements, identifying improvement gaps, possible solutions and improvement tools
- The actual **Implementation** of systems, tools, techniques and new processes and their embedding in the organisation so that they are established for the long term

In using this model TMC are able to structure and tailor engagement with employers and create learning and development opportunities at all levels within the organisation, in particular through:

- Work-based flexible workshops and modules
- Knowledge transfer partnerships
- Knowledge transfer consultancies

These partnerships have proved very effective and have resulted in the development of University Certificates in Professional Development (UCPD) and the potential for a work based foundation degree in manufacturing and operations management.

For more information about TMC see:

<http://www.tmc.uk.com/index.php>

For more information about Knowledge Transfer Partnerships see:

(http://www.tees.ac.uk/sections/business/knowledge_transfer.cfm)

Key Research Findings

- **31%** of questionnaire respondents indicated that individuals from their company had participated in higher level training in the last 12 months
- Participants in higher level training tend to be managers. Responses to the questionnaire indicated that the figure was around **72%** of total participants
- **41%** of training was provided by a higher education institution. Those indicating a university named either Teesside University or the Open University
- The most prevalent location for training to take place in was training providers' premises. However a number of research participants expressed the desire for more to be delivered in the workplace
- Relevance to the company is a major influence on research respondents' choice of training provider
- The importance of location of training varied across research participants. However this may be influenced by the fact that many employers are now aware that training providers will deliver in the workplace

Research participants stated that:

- "The sector needs more training that is relevant to companies' specific industries and is assessed on the job" (*logistics*)
- "Over the next several years the company needs to move into other areas of business in order to expand and grow. We will only be able to do this by investing in the right training for our employees" (*advanced engineering*)
- "We need more training providers who are prepared to talk to businesses and ask what our needs are and then fit in around them"
- "More than anything, training has to be business relevant and providers need to be very flexible in developing and delivering training packages that are tailored to individual needs" (*advanced engineering*)

see appendix 2

Demand

As *New Industry, New Jobs* states, 'many of our most important competitiveness policies run across the entire economy and are important to businesses in every sector' (BERR 2009:28). However, there is also an argument for tailoring due to the differences across sectors, markets and regions. In fact one of the most common responses to the interviews and questionnaire was the need for generic/fundamental skills to be delivered in a sector-specific environment.

Key Research Findings

- **25%** of all respondents indicated that the company were planning to participate in higher level training in future:
 - **100%** of these had Company Training Plans
 - **44%** of those planning to participate had a training budget
 - **55%** used training needs analysis tools
 - **77%** planned to participate in leadership and management training
 - **77%** planned to participate in technical higher level skills training
 - **44%** planned to participate in health and safety training
 - **88%** were doing so in order to develop the company
 - **77%** were doing so in order to expand
 - **44%** were doing so in order to diversify
- A frequent response was that legislated training was prioritised

In the future many companies wanted to see training that:

- "...ideally provide[s] short modules and tailored to individual needs..." (*advanced engineering*)
- "is offered by all support bodies, run locally and consolidated into one location/information resource" (*digital multimedia*)

see appendix 2

1. Process industries/Energy and Advanced Engineering

It is immediately striking from the interview and questionnaire results that there is some overlap between these sectors. These 'science-based industries' which include pharmaceuticals, biotechnology, speciality polymer and rubber, petrochemicals and commodity chemical sub sectors and more have built a legacy in Tees Valley over past decades and as such are recognised as strategically important to the sub-region. In fact Tees Valley has been referred to as the 'Engineering Region' (Tees Valley Regeneration, 2009:2). An academy for science-based industries is currently in development at Teesside University. What is more they are closely aligned to a number of One NorthEast's priority sectors, namely chemicals/pharmaceuticals and energy. Together they make a significant contribution to the sub-regional economy.

These 'science-based' sectors are, in the main, knowledge and skills intensive and rely on high level science, engineering and innovation and whilst they do

have very specific sector requirements, they are facing similar challenges. One of the biggest challenges for these industries is the lack of interest in STEM (Science, Technology, Engineering and Maths) subjects both in schools and at HE level. Ultimately this leads to difficulties in recruiting skilled and experienced staff; the pool of those with technical, professional and senior management expertise is without doubt getting smaller. This is exacerbated by the ageing workforce. The interviews and literature review also highlighted a number of other issues that these sectors must contend with. Alternative and renewable energy is, at present, key and Tees Valley companies are at the forefront of this. Developments include offshore wind projects, construction of Europe's largest bio-ethanol plant and wave and tidal power research. These initiatives cut across these important sectors.

Key Research Findings – The Process Industries /Energy/Advanced Engineering

Priorities for these sectors are:

- The need to pitch skills training at the right level – many in these sectors are graduates already
- Enhancing the image of the sectors to challenge entrenched perceptions
- Addressing ongoing changes in legislation
- Recruiting more work-ready graduates
- Maximising potential to grow
- Championing STEM skills in both the existing and future workforce

See appendix 2

The increase in low-carbon industries (carbon capture and storage, biomass, bio fuels and recycling) presents significant opportunities for the Tees Valley. In July 2009 the Government announced that the North East would be a Low Carbon Economic Area specialising in ultra-low carbon vehicles. Whilst this does not necessarily fit precisely with the predominant industries that already exist in the Tees Valley, the structure of the sub-regional economy, in terms of infrastructure and labour market, does make it an attractive place to nurture the growth of new low carbon industries including re-skilling existing engineers.

There is a general consensus that the transition to the low carbon economy has the potential to be the 'second industrial revolution' (McFadden, 2009) and if the Tees Valley is to capitalise on the impact of this then the economy itself needs to be transformed. This will require high levels of innovation and skills and businesses capable of rising to the challenge. From this research it appears that local employers recognise the need to improve higher level skills across the workforce. In this changing environment companies and employees will need support in harnessing new technologies, developing manufacturing solutions and managing the skills transition to facilitate the creation of new industries and honing existing skills currently available across Tees Valley.

The Process Industries:

The largest integrated chemical complex in the UK is based in Tees Valley (Wilton, Billingham and Seal Sands). In terms of manufacturing capacity this petrochemical cluster is the second largest in Europe, contributing £3.5billion to the UK economy. 65% of the UK chemical exports are actually from Tees Valley and 75% of Teesport's trade is related to the Process Industries (TVU).

Over recent decades offshore oil and gas has become a significant industry in the Tees Valley mainly due to the proximity of the sub-region to the North Sea oilfield and a supply of good engineering companies. Despite depleted oil and gas supplies the sector has continued to evolve by moving into more specialised areas, for example JDR cables in Hartlepool is a growing company working in the subsea industry and is "...the only site in the UK designed specifically to manufacture subsea power cables for the growing offshore renewable energy market and increasingly complex oil and gas sector" (Tees Valley Regeneration 2009:13).

The Process Industries sector is evolving; indeed a significant investment programme (£4 billion) is planned for this cluster over the next five years in areas such as energy, biofuels and petrochemicals. This investment signals the need for more skills in relation to the renewable and alternative energy sources. Many skills will be required around cutting edge innovation in this ever evolving sector. Both Teesside University and Durham University are working to develop new and existing courses specifically targeted at this ever evolving and strategically important sector (see [appendix 7](#)).

MBA with Process Industry Specialism at Durham University

This new part-time Executive MBA programme is designed specifically to help future leaders to develop the high level skills needed to thrive in the complex and competitive environment of the process industry. It has been developed in close collaboration with The North East of England Process Industry Cluster (NEPIC).

Programme participants will gain an understanding of complex, industry-specific subject areas which, when combined with other core and elective modules, will prepare them to undertake leadership roles within their chosen sector. This programme is also suitable for those wishing to move into the process sector.

Programme content

You will study:

seven core modules

three modules developed in partnership with the process industry

two elective modules

Core modules

Managing in the Competitive Environment

Managing in the Global Environment

Managing Finance

Managing People

Modelling and Analysis for Business

Strategic Management

Methods of Inquiry

Process Industry Modules

Project Management for the Process Industry

Process Industry Risk Management

Environmental Regulation

Project Management for the Process Industry

The Process Industry operates in an extremely robust, complex, regulatory framework and over recent years there have been many changes, with many sites owned by large multi-national businesses with headquarters and manufacturing sites spread globally. Inevitably investment decisions are made outside of the site environment with intense competition between locations. As a result, project management - from inception through to commissioning - has become a more complex process. This module seeks to provide an insight into the myriad facets of the project management process, drawing upon relevant industry case studies.

Process Industry Risk Management

This module is designed to enable business leaders to understand the managerial challenges arising from the complex regulatory framework in which process sector operates. It examines the development of regulations and the drivers for increasing regulation, looking at how compliance with legislation affects leadership and management of the sites. Issues covered include REACH, COMAH, medicines regulation, and voluntary management standards.

Environmental Regulation

Exploring the development and implementation of environmental regulation and the impact on the management of process sector sites, issues covered include: management of emissions and wastes, energy control and climate change challenges, emergency planning and future regulatory changes. This module focuses on how these issues impact upon management decision making.

Electives

Your remaining two modules are selected from a comprehensive list and provide an opportunity to enhance your knowledge and skills in areas of particular interest to you.

Energy:

At present European and UK energy markets are undergoing massive transformation and the main factors shaping the future of the sector are the low carbon economy, new technologies and ensuring energy supply. The UK has set some tough energy consumption targets for 2020 and there is a realisation that if these targets are to be achieved then renewable energy needs to be further developed. In particular there is a need to develop academic groups around the issue of renewables and the development of training around new technologies and processes. Support will almost certainly be required for staff migrating from traditional energy industries.

Once very clear, the demarcation between industries such as gas, electric, water and power are is becoming blurred as new technologies are being embraced. Employees within the sectors will need to be skilled across the emerging technologies. More engineers will be required across the industries.

Two growing industries within this sector are nuclear and waste management. The nuclear sector is said to be on the 'cusp of renaissance' and is "...widely accepted as an important part of the future and diverse energy strategy" (Cogent 2009:8). Future skills in this sector will be driven by the

decommissioning and the building of a new fleet but also by the ageing workforce. By 2020 it is estimated that nationally around 70% of managers and senior managers, 53% of technicians and 40% of professional employees will have retired. These changes will be predominant mostly in regions that will potentially have old and new capacity. The North East (Hartlepool) is one of the early movers in this area. The Cogent report *Power People* suggests that "the regions around these sites will hold nuclear-literate workforces and communities...." (Cogent 2009:44). The anticipated new practices and regulations are likely to lead to changes in skills (yet to be determined).

Whilst the nuclear sector within the North East is small there is future potential not only in decommissioning but also in the development of new sites, with Hartlepool currently one of the early movers in this area.

The wind and marine sector is also expected to undergo substantial growth over the next 10-15 years. According to NAREC, it is predicted that by 2020 an additional 55,000 jobs (nationally) will be required in professional, technical, oil and gas refining and processing and more will be required. Work will be available in relation to design, manufacture, installation, work on vessels and operating, maintaining and repair, with specific jobs including electrical engineers, mechanical engineers, project managers and technicians. Whilst it is expected that individuals will have specialisms, they will be expected to have a broad education base, because there will be a need for people to be multi-skilled.

Advanced Engineering:

Britain's industrial strength is based on a successful manufacturing sector and in Tees Valley the manufacturing sector has been and remains strategically important. Despite the decision in February 2010 to mothball the Teesside Cast Products plant at Corus, recent inward investment in some companies has meant that the engineering sector has actually experienced expansion. Whilst the sector is without doubt facing many trials and tribulations '.. there will be considerable commercial opportunities available to manufacturers as the UK builds the renewable infrastructure required to meet the 2020 energy targets' (BERR and DIUS, 2008:45). Indeed the sectors already mentioned above will not thrive if the Tees Valley manufacturing base is left undeveloped, for example, the wind and marine sector will require significant amounts of steel to build turbines and so on.

The sector's dependence on a range of science, technology and engineering disciplines is increasingly likely to be contextualised by the global economic climate. Speed, flexibility and localised production are expected to be key. It is anticipated that the sector will become more service orientated and "this service orientation of manufacturing and the increased customer demand will have consequences for the organisation of production, supply chain management and customer relations (SEMTA, 2008:37). Advances in new technologies such as nanotechnology, materials science, electronics, mechatronics, ICT and biotechnology will impact on the skills required.

Work undertaken by SEMTA in 2008 revealed that between 2005 and 2014 an estimated 4,500 technicians (70%) and 1,600 professional engineers (19%) will require skills at level 4 and above across the North East.

Aker Solutions – Committed to Learning & Development

Aker Solutions' businesses span a number of industries, including [oil and gas, refining and petrochemicals](#), [power generation](#) and [mining and metals](#). The company believe in investing in their workforce and as a consequence has excellent staff retention.

AKER workforce = 75% engineers; 18.5% of these Engineers = female

Although they are graduates they still need and receive technical skills training. Even those who are very competent need technical up-dating in key specific skills areas. The majority of managers are proficient in 2 or 3 sectors. The company see it as vital that their employees are multifaceted, with strengths that cross over; they may be best skilled within their original area of expertise – but they need to be flexible and adaptable to change, especially if they wish to progress up the leadership pipeline. Those who diversify their skills and knowledge, perhaps developing specialisms, may find they overtake longer-serving employees (who have been at the company a long time but have remained with one strength) on the career ladder.

Aware of the ageing workforce Aker employ some specialists who have retired on reduced hours to mentor newer, less experienced staff. Specialists are the most valuable staff and the company will do their utmost to retain them. Many senior staff have Masters and PhDs. Aker have some quite specific, specialist requirements, such as:

- Courses in Mining and Minerals, only at Leeds and Cambourne.
- Power Energy degrees - in short supply
- Water (Utilities) degrees – in short supply

However, they are also flexible about routes to career fulfilment with senior staff reaching their current roles through varying means, for example: as an Apprentice who progressed thorough job experience; as an Apprentice who then studied at HE level and worked overseas and as a direct graduate entrant, mentored by an MD. Aker value this diversity and hybridity, rather than tying routes down or minimising promotion prospects.

15% of the Aker Solutions E&C Ltd workforce are trainees

As part of their skills and training strategy, Aker:

- Work with The NETA Training Group to develop and progress their apprentices. Aker view their apprentices as a valuable part of the business, training them in three different specialisms to cover more areas and give a good all-round grounding
- Mentor Teesside University students
- Sponsor staff to attend HE courses and pay their fees (staff are expected to stay for at least three years after this or fees are claimed back)
- Attend business forums where they share expertise with other companies
- Place Science & Engineering Ambassadors in Schools to attract pupils to engineering and the North East.
- Have some specialisms which are hard to recruit to, with a number of members of staff in demand worldwide
- Have developed their own Skills Academy

- Encourage practitioners to train one another
- Are refining their Project Management training and see this as vital
- Believe in 'growing their own', helping with hard-to-fill niche vacancies
- Support employees joining the Work-based Studies degree framework at Teesside University, and are interested in the potential of this flexible framework approach for other training needs

2. Logistics

Logistics is the management of the flow of goods between the point of origin and the point of consumption. By its very nature it is a sector that underpins the majority of the UK economy, but is particularly vulnerable given its dependence on other sectors to produce goods. Covering haulage, same day delivery, pallet loads, hazardous goods, warehousing, and freight forwarding (broker service) nationally the sector generates around £74.5 billion per year. At present the sector is undergoing considerable legislative and regulatory change. Moreover the sector in general often has a poor image and a smaller percentage of its workforce is qualified to level 4.

The research indicates that there are some core skills which are lacking across the whole sector, some of which are at higher level (leadership and management and specific technical skills). However a large proportion appear to be lower/intermediate level skills, giving the impression that, on the whole, higher level skills are in much less demand in the logistics sector than the other sectors discussed in this report. It is not only critical that the pockets of the sector requiring higher level skills are identified and catered for but also that the lower level skills are also addressed. If not this could potentially impact on aspirations of individuals and companies in the sector and subsequent growth.

Key Research Findings - Logistics

Skills gaps identified are:

- Technical, practical and job specific skills
- Customer handling
- Problem solving
- Team working
- Leadership and management

Other issues raised:

- Lack of clear progression routes for people in the sector
- Lack of time to release staff from their jobs to train (the impact of downtime)

see appendix 2

Like other sectors, logistics has an increasingly ageing workforce and is having difficulties finding skilled individuals to replace retirees. From the interviews carried out with local firms it is noticeable that companies within the logistics sector prefer to recruit individuals whom they can develop, mentor and 'mould'. Moreover it is evident that relevance to work and suitable progression routes at

higher level are essential (commitment to training also came across strongly from the questionnaire and interviews). One interviewee commented on commitment, saying that even in a recession the need to continue training and developing staff is vital. They gave an example of a sizeable company in the sector that reduced the amount of training it undertook when business started to decline. As a result the company is now not as successful.

This approach of developing their own talent was implicit not only in the survey responses but in the interviews we undertook with local companies. Some companies such as PD Ports are developing whole training programmes and frameworks, not only for existing staff but also to help attract new staff.

PD Ports – A Strong Commitment to Staff Development

PD Ports is a company that has experienced significant change in ownership and management boards over the last fifteen years. This has resulted in shifting approaches/attitudes to training. Following the most recent change in board in 2003 the company have adopted an extremely positive approach to developing their staff. During this time a training needs analysis was undertaken and between 2004 and 2006 all staff were upskilled to Level 2 and supervisors to Level 3. Level 2 training has now been incorporated into an enhanced induction process for all new staff.

However training at PD Ports is not purely focus on the lower end of the skills spectrum. In fact, as a result of the difficulties experienced in recruiting staff externally (due to the very specialised skill requirements) the company have recognised the importance of 'growing their own' staff. For this reason a great deal of emphasis is placed on training plans and succession planning. For example they have established training plans which sponsor 16 year olds from schools and colleges apprenticeships to degrees and beyond.

Building on these ideals and the need to recruit more staff (to respond to future expansion of Teesport) PD Ports are currently in the process of rolling out a Foundation Degree in Port Management with Teesside University and looking into the possibility of developing a Graduate Training Scheme. Looking towards the future and growing their own staff they are also working with a local school to develop children's interest in science. This partnership is in the early stages, however PD Ports are already thinking how this model can be developed.

The specialist skills required by PD Ports has led them to build a strong commitment to staff development and the size of the company has enabled them to invest in training. Whilst it is difficult for smaller companies to invest in skills development to the same extent, the positive attitude of PD Ports towards higher level skills should be commended, encouraged, nurtured and shared with other companies.

Whilst the sector is dependent on consumer demand (and therefore more susceptible to macroeconomic changes) Tees Valley is emerging as a key location for logistics and warehousing (TVEA Draft, 2009). Distribution arms of big retailers such as Asda, Argos and Tesco are already based in the sub-region. The attractiveness of the Tees Valley appears to stem from the availability of space, skilled labour and connectivity. Not only is the road network good but there are also excellent facilities and infrastructure in place at Teesport. The Northern Gateway, one of a number of major developments planned at Teesport (deep sea container facility) is expected to go ahead in the next two to three

years. In addition to this PD Ports have already been in talks with other major retailers/companies about establishing export centres on Teesport and using Teesport as part of their logistics network. This expansion is vital and a clear indicator of the potential of this sector in the future. Not only will it bring work from companies basing their operations at the port but also work directly related to managing and operating the port. With the port likely to be the main entry point for goods into the North the expansion is also likely to have a positive impact on the road haulage side of the logistics sector.

3. Digital Multimedia

The digital and creative sector in the UK has grown by 4% in the past decade (BERR and DCMS 2009). The Government has prioritised the development of the digital sector: "the bottom line for the Government is that the creative industries and must remain central to a balanced knowledge economy. They are one of the keys to the recovery now underway and our whole economic future..." (Mandelson 2009).

These new industries have seen significant growth in the North East and although the sector is still relatively small it punches well above its weight (Fay 2009). The emergence of this sector in the Tees Valley is due, in large part, to the existence of the DigitalCity project. The project works to stimulate the creative and digital sector in the region the Institute of Digital Innovation (IDI), a centre where postgraduate research and business work together, The DigitalCity fellowships programme has led to the creation of 91 businesses to date in Tees Valley and a cluster of some 80 businesses is supported by Boho. In addition to this Teesside University has developed a significant portfolio of high quality digital and creative courses and has been ranked 15th in 3D world's list of top 20 animation schools. As the information above demonstrates, there is clearly potential and infrastructure in place for this burgeoning sector to develop into a key economic driver.

Institute of Digital Innovation – Harnessing Potential

The Institute of Digital Innovation (IDI) is a premier location for creative industries, digital media and innovative use of digital technology. Located on the Teesside University campus the IDI is involved in a number of initiatives from graduate support, project work with voluntary and community groups and CPD events. The latter often involves bringing 'talent' from successful business into the region to deliver the events.

Digital Fellowships

Operating as a nexus between business, research and higher education a significant element of the IDI's work is around Digital Fellowships. Running since 2003 the Digital Fellowship scheme offers budding entrepreneurs, artists, filmmakers, animators and game designers to explore their ambitions. Over a period of up to six months, Fellows are supported in carrying out research, portfolio, product or commercial development to a stage where the project is either commercially viable, reaches an industry standard or is able to attract additional funding. During this time, they are mentored, given specific business training, have access to state of the art facilities and by pooling some of the UK's brightest talent in one facility, Fellows also have access to a vibrant, interactive community in which can be sought peer-to-peer inspiration, innovation and support.

This supportive environment has seen the birth of an impressive number of creative, digital and IT start-ups (generally speaking, 1 per week), many of whom have gone on to seal deals with some of the world's major companies.

Digital Discovery Route

An innovative and perhaps surprising element of the IDI's effort is the Digital Discovery Route, which focuses on working with community and voluntary groups. The key goal for the Digital Discovery Route (DDR) is to improve digital inclusion across the region. Working within its communities and education providers at all levels across the region, Digital Discovery aims to tackle digital exclusion at grassroots level. There are two strands to the DDR programme; Digital Champions and Community Media.

Offering a comprehensive support package to empower community, charity and voluntary groups the Digital Champions programme not only offers knowledge, understanding and confidence in delivering informal learning within fundamental digital technologies, but it also develops a critical awareness of media and technology, and supports the Digital Champions in their journey from being a passive consumer to an informed advocate. Since inception the Digital Champion programme has trained over 50 community role models across the region. Current midterm evaluations have been very positive with comments such as, *"the Digital Champions programme has assisted me greatly in developing knowledge, skill, confidence and competence. Research highlights the difficulties of transferring training into practice. Digital discovery provides that 'Oh so special ingredient', continued support following the training sessions. This programme is all about discovery - digital, personal and professional. Thanks to all involved I'm developing in all of these areas"*.

Recently the Digital Discovery Route and employment charity Shaw Trust secured funding from the Government for the Digital Champions programme, as part of a 'learning for pleasure' innovation spearheaded by the Department for Business, Innovation and Skills (BIS). This funding has enabled DDR and Shaw Trust to establish a sound partnership in order to extend the Digital Champions programme to a wider and more diverse network of community, voluntary and charity groups, with a particular focus on disabled and disadvantaged groups.

The Community Media strand of the DDR programme gives individuals and community groups a "voice" they might not otherwise have had. The scheme supports community groups use digital and IT for specific projects, such as Digital Villages. IDI staff develop software to match the needs and demands of each community group and they in turn take ownership of their own content creation. A Digital Village is a space where a community expresses their identity through Information and Communication Technologies (ICT) and Digital Media. This may be from an artistic, heritage, or economic perspective or a mixture of all three. This can be done through poetry, digital stories, community newspapers online, image collections (old and new), audio (Internet radio, oral history), animations, video, and text. To engage in the activities the participants need to learn new skills and so the Digital Village also becomes a learning community. In addition to this activity I help build teams of Community Media Volunteers who function as citizen reporters on events such as Middlesbrough Mela and Stockton International Riverside Festival.

Generally speaking the digital sector is a largely graduate-level sector with businesses on the whole SMEs or micro SMEs. The workforce is also fairly transient, with specific higher level skills often 'bought in' by companies. The Government report Digital Britain (BERR and DCMS 2009) identified 3 core areas for the digital economy – 3D TV, digital security, e-health and e-government. Clearly there are going to be specific issues around these areas but from the

interviews and the survey it is evident that one of the biggest challenges for the sector is around convergence of different media forms – ‘360 media’. Consequently the sector needs to support the current workforce to develop more ‘convergent skills’ as well as ensuring that graduates are flexible, adaptable and multi-skilled. Another key issue is the need to move the current workforce from traditional media to the new media ecology. Sustain, a project developed by Skillset (the Sector Skills Council for the digital sector) and Teesside University, is supporting this. The interactive Sustain workshops have been designed specifically for people working in traditional media and aim to explore creative and commercial challenges in new digital media environment, particularly cross platform collaboration.

(http://www.skillset.org/uk/northeast/news_events/article_7221_1.asp)

Key Research Findings – Digital Media

Challenges for this sector are:

- Improving skills across a range of roles & appreciating the benefits of CPD
- Existing Managers often become Managers ‘by accident’ and need development support
- Enhancing commercial vision in companies and individuals & the capability to run a business
- Recruiting more senior people with experience
- Dealing with grants and sponsorship
- Developing more opportunities for postgraduate skills acquisition and development (most are graduates already)

see appendix 2

Responses to the questionnaire and interviews indicate that there is a lack of CPD culture and low availability of post-entry training within the sector. If the sector is to become a key economic driver this deficit needs to be addressed. Indeed in a recent speech Peter Mandelson expressed the need to make sure that:

Our education system is producing the right skills – both the fundamental intellectual and artistic confidence that is the root of creativity, but also the craft skills that underwrite so much creative endeavour. The technicians and producers and programmers and editors, and even the builders who often literally build the stage on which creative industry takes place

(Mandelson 2009).

However this, according to the research, is not straightforward. There seems to be a general consensus on the need for business development skills, finance and management skills. As far as these types of skills go the need for master classes with input from sector experts was commonly expressed. However in terms of

sector-specific skills the picture is more complex. The sector is fast-moving, with fundamental principles, technology and processes changing dramatically within short spaces of time. Skills development is, according to one interviewee, essentially 'curriculum at the speed of light' where individuals will need to focus on what skills will be required next rather than enhancing the skills they already have. For this reason traditional courses are unlikely to provide the solution, taking too long to develop and requiring lecturers to be constantly developing their own skills. This therefore necessitates a different approach to delivering higher level skills in the sector where individuals learn the basic/fundamental principles and subsequently learn new skills as and when required by themselves. 'On demand knowledge' / 'distributed skills' are likely to become much more popular in this sector as it develops.

Aside from the specific digital and creative industries there are significant opportunities through digitisation of other sectors, such as the public sector and manufacturing (where, once the end product of a manufacturing process, digital has now become the process itself). In fact digital skills permeate nearly every other sector/industry. The digital skills requirements of other sectors are likely to grow, as other industries attempt to make cost efficiencies. This needs to be kept to in mind

Common Themes

Some clear themes emerge from the evidence gathered through both the interviews and the questionnaire responses. Within these themes, which are further developed in the following section, several issues were repeatedly raised.

Key Research Findings

- A high proportion of research participants from these sectors identified generic training delivered with a sector-specific slant as the most appropriate to the current and future skills development. Key areas include:
 - Leadership and Management
 - Business Development (grow and diversify your business)
 - Sales Skills
 - Communication Skills
 - Finance
 - Marketing
 - IT and Software Training
 - Legal Issues – Intellectual Property, Copyright and so on
 - Innovation
- However there needs to be a balance between generic (in context) and sector-specific skills
- There is a need for skills training which prepares people to hit the upturn 'running', for example, Business Development, Change Management and so on
- The workforce needs to be adaptable, flexible and dynamic – multi-discipline programmes should be emphasised
- Employers insist the training must be relevant – ongoing research into markets is vital

- Practitioners are often the best qualified to train others and academics should work with them whenever possible
- Initiatives are needed to tackle issues around the ageing workforce
- The higher level skills landscape is confusing –clarity and communication needed
- Linked to above, progression is often fragmented and clear routes need to be established
- Companies prioritise what they have to do and need to be helped to find a balance between what they want to do and what they have to do (often legislated)

In terms of the impact of training:

- Improved technical capacity was most frequently cited
- Improved skills and improved management were also highly rated
- No one indicated that training had impacted positively on increased productivity or profitability, emphasising the difficulty of quantifying the monetary value of higher level skills and training
- Everyone identified at least one area where training had had an impact

Other common issues:

- The need for cross sector collaboration and communication
- Developing entrepreneurial thinking amongst the workforce

see appendix 2

Section 4: Moving Forward

Future Scenarios

Looking ahead, it is possible to identify the key sectors which will probably thrive and develop and even the type of jobs that will be available; however, it is more difficult to pinpoint exactly which skills will be required. Nevertheless it is evident from economic, regional and political literature that higher level skills will become increasingly important in driving the economy, 'Britain is a knowledge economy. Its competitive advantages in the global economy are all built on sophisticated skills, high levels of creativity and intellectual confidence' (BIS 2009 [A:41](#)).

In planning for the future the current strengths and expertise of the sub-region are good starting points for developing the capacity and capability to place the UK at the forefront of the global economy. For example:

- Demands for alternative forms of energy, due to the demise of fossil fuels and climate change, are generating a low carbon economy. The development of Low Carbon Economic Areas (LCEA) is a key opportunity for the Tees Valley.
- Future generations with increasingly sophisticated tastes will expect, as a matter of course, high-quality, high-tech products and services; the production of these goods and services will drive and grow the economy.

As a sub-region the Tees Valley is well placed to maximise these opportunities; there is a strong and innovative higher education system with universities and FE colleges working closely with employers and schools. Moreover many of the activities currently being delivered in Tees Valley in relation to higher level skills fit well with national priorities.

A Tees Valley higher level skills strategy will need to:

- align with both national priorities and identified local needs
- encompass the profiles of existing and future skills
- balance aspiration and reality

Through this research a number of common issues have emerged, these were raised in **Section 3, Skills in the Tees Valley** (page 18). The following section looks at how to usefully strand these themes, take them forward, and use them to make some recommendations.

1. Any higher level skills framework needs to be flexible, adaptable, transparent and demand-led

Although the polycentric nature of the Tees Valley has often resulted in plans emerging at a borough/local level, the sub-region has a successful track record in working in partnership. The sub-region needs to build on this and other areas of good practice (such as the work developed through the North East Higher Skills Pathfinder – <http://www.unis4ne.ac.uk/go/projects/higherskillspathfinder>) in order to create a successful and workable higher level skills strategy for the

sub-region that demonstrates clearly how all the constituent parts of the sub-region can contribute to the development of higher level skills and economic prosperity. A neutral skills broker is also an essential element of taking this agenda forward.

Any higher skills framework for the Tees Valley should:

- Usefully inform and reflect both national and regional skills strategies
- Draw upon and reflect the priorities laid out in Tees Valley Unlimited Business Plan 2009-2012
- Recognise and build upon the particular strengths and differences within the Tees Valley
- Facilitate sustainable partnerships between Higher Education Institutions (HEIs), FE colleges, schools and employers
- Where possible, build on existing good practice
- Develop the role of a neutral skills broker to support and advise businesses and individuals
- Effectively use LMI – precise information about jobs, skills and graduates
 - undertake ongoing research to make connections between higher level skills and economic development
- Be sustainable
 - not a cash driven project mindset
 - embedded within the region and linked to Skills Funding Agency funding and that of employers

2. Employers must be encouraged to develop the higher skills levels in their organisations

In developing the higher level skills of the Tees Valley it is crucial that employers are on board, fully appreciate the value of higher level skills and invest time, effort and money into the development of higher level skills in their workforce. Employers should be 'active partners... not passive customers' ([Milburn 2009](#)).

Employers need to embrace the ethos of Continuous Professional Development (CPD), embedding this into the workplace mentality through their development plans. In order for employers to recognise the value of higher level skills the educational provision of these skills needs to be responsive, relevant and delivered in a sector-specific context, 'there can be no room in the system for vocational programmes that do not constantly evolve to meet changing business needs' ([BIS 2009](#) **B**:44).

Across the UK HEIs have begun to work much more closely with employers and this is certainly the case in the Tees Valley. The FE colleges and universities are all working with employers, both in collaboration and individually. Teesside University has secured significant HEFCE funding to develop its portfolio of business engagement activities, ranging from specific training to knowledge transfer.

The North East Chamber of Commerce (NECC) Foundation Degree in Leadership and Management – winner of the *Times Higher Education* ‘Outstanding Employer Engagement Initiative’ award 2009/10

Helping employers to develop the potential of their staff has never been more important. **Teesside University**, working with the **North East Chamber of Commerce (NECC)**, has come up with an innovative solution: a programme combining a strategic approach to staff development with a highly flexible offer.

This **Foundation Degree in Leadership and Management** was launched in 2007 in response to demand from NECC member organisations who saw their future growth undermined by a lack of up-and-coming managers and trained business leaders.

Designed with the NECC to be as accessible as possible, the degree is delivered by Teesside Business School staff in collaboration with specialists from across the university and guest speakers from industry.

It's a highly practical course, aimed at **junior and middle managers** which consists of a series of two-day master classes together with work-based assignments and learning, heavily supported through a Virtual Learning Environment. Modules are run in convenient local locations, and can also be delivered on company premises. A **flexible two- to three-year programme**, it has been designed so that busy students with heavy commitments at work can **step on and off** at a number of points along the way, without disadvantage.

Key Headlines

- **First 19** students graduated June 2009; **12 are going on to ‘top-up’ to BA (Hons)** in Leadership and Management
- The response from employers has been outstanding
- Now running **7th cohort, with 77 students** enrolled from **41 companies**
- Other organisations are asking Teesside University to develop this foundation degree to precisely meet their workforce development needs

The students say:

"The course has given me the confidence and passion to develop the skills to reach my potential" - Finance Director

"It has made me more confident about adapting to change" - Regional Engineering Manager

"I'm already applying things I'm learning on the courses to the way I manage people at work" - Middle Manager, Market Research Company

"I like the mix of elements on the Foundation Degree. They're a good fit for staff development and developing the individual. I can already see a noticeable difference in the way the team is thinking about things and how it's improving" – MD, Market Research Company

Existing relationships should be nurtured and clear lines of communication forged to further enhance employer participation. Higher education providers

across the sub-region need to create study options that are not only flexible but also vocationally relevant; developing innovative entry routes and further enhancing credit frameworks. Teesside University has a significant portfolio of flexible study options and entry routes which are continually evolving. (See Work-based Studies example p15) Employers need to use higher education providers more effectively; a key element of provider/employer relations should be mutually developing courses and reviewing skills trends.

Knowledge transfer is a powerful way in which employers and universities can work together to enhance higher level skills. Research and knowledge exchange in universities underpin innovation in the economy; in the past few years universities have made big steps in making this research and knowledge much more accessible to businesses through knowledge exchange. In the Tees Valley continued encouragement is needed to ensure that more businesses become involved, in order to build upon the successful work carried out through Knowledge Transfer Partnerships (see example of Teesside Manufacturing Centre p21)

A Tees Valley Higher Level Skills Strategy must:

- Encourage employers to actively develop all employees
 - More use of in-house accreditation
 - Up-skilling and re-skilling – better at existing skills but also learning new and different skills
- Utilise existing expertise
 - Companies should develop mentor schemes using skills of retirees
 - Take advantage of placements and internships
 - Build on past learning using APL processes (see [appendix 6](#))
- Embed higher skills aspirations into staff recruitment, retention and career progression
 - Providers to develop flexible and vocationally relevant learning pathways
 - Develop sector-specific master classes for generic issues
 - Develop HE work based learning frameworks (see p15)
- Motivate staff – build strong commitment within teams and across companies
 - Employers should fund training, where appropriate
 - Embed an ethos of Continuous Professional Development (CPD) into the workplace mentality
- Research/innovate/plan
 - Predict future skills needs through continual research and collaboration
 - Use Training Needs Analysis (TNA) tools to help companies to articulate their skills needs

- Work with HEIs to develop the courses and programmes to fulfil the above
- Further develop KTPs across the sub-region (see p19)
- Establish sector training forums to:
 - Build relationships between providers and companies
 - Enhance communication
 - Facilitate discussion/debate around cross-sectoral issues
 - Develop courses in conjunction with employers

3. Employees must be developed for the future

"We cannot respond to the global economic challenges if we do not develop the potential of all our people" (BIS 2009 **B**:25). It is therefore essential that when debating higher level skills, the issues associated with future employees are also considered. Looking towards the national 2020 ambitions, and specifically the aims around increasing the number of people holding higher qualifications, more individuals need to be shown that it is possible to access higher level learning opportunities. Whilst participation has increased considerably there is still a very real need to recognise, and further develop, alternative and non-traditional routes into higher education. Sponsorship opportunities provide a possible option. A number of companies and training providers are now working together to develop programmes which see young people being sponsored through their learning and combining work experience, academic study and practical skills (from apprenticeships through to degree level). Multi-disciplinarity and the 'real world' are embedded into such programmes from the outset and this results in 'work-ready' graduates. The development of higher apprenticeships, summer universities and similar initiatives are also feasible options. What is crucial and central to all of these schemes, is the embedding (and normalising) of the idea of lifelong learning.

Raising aspirations is a vital part of increasing participation. The information, advice and guidance given to young people in schools needs to be adequate for their needs, in order that they are encouraged to set their sights on higher education and 'have access to the full range of opportunities to fully develop their particular talents' (BIS 2009 **B**:33). Teesside University has, over a number of years, established excellent links with colleges and schools and developed an extensive portfolio of outreach and widening participation activities. Inclusive participation and widening access is in Teesside University's DNA and the institution's widening participation strategies have been instrumental in addressing chronic underachievement and progression within the region. In addition a key element of the Higher Education Business Partnership (HEBP) is the joint development and delivery of HE programmes and a sharing of contacts and good practice across a very wide range of activities. Employers need to be encouraged to participate more fully in these activities to help to raise awareness of various careers and essential work skills. When addressing the aspirations of young people it is worth taking into account the well documented attitudinal differences of Generation Y (see for example - <http://www.guardian.co.uk/money/2008/may/25/workandcareers.worklifebalance>).

The Meteor Programme

Raising aspirations, achievement and progression amongst young people is a key element of Teesside University's outreach strategy. The University has developed a comprehensive programme of pre-entry support. A 'beacon' of the University's pre-entry and outreach programme is the 'trailblazing' Meteor programme. First launched in 1999 the Meteor programme aims to inspire local primary school pupils to think about further and higher education, through a series of activities on and off campus.

When it was initially launched the programme was offered to year six pupils from primary schools in Middlesbrough only. A decade on and the programme has proved so successful that it is now run in 14 primary and 19 secondary schools across the Tees Valley. Every year the programme is topped up with 500 year six pupils.

Working with pupils from year 6 to year 9 programme activities include:

- Subject Taster Days linked to National Curriculum Key Stage 2
- Programmes in ICT, Maths and Science
- Work in schools by student mentors and the Schools & Colleges Partnerships team
- Summer Schools
- Key Stage 3 English - National Literacy Strategy/speaking and listening
- Science Club and Science Communicator Award
- Opportunities Conference: Careers Education
- Family Festive Fun Day

The programme culminates with a summer school and Meteor 'mini graduation' ceremony.

The impact and success of Meteor is widely recognised and has led to a number of accolades and much national recognition:

- In 2000 the first Meteor pupils were invited to Downing Street to meet Tony Blair and other cabinet ministers
- Impact research undertaken by HEIST (2006) found that:
 - the Meteor programme clearly helps pupils to believe in their potential to progress onto university
 - There was "...a big change in pupils' perception and attitude"
- Acclaimed by HEFCE (2007) as a model of best practice in key stage 2/3 transition

Building on its successes the Meteor team have now developed a toolkit and consultancy services for other HEIs wanting to adapt the model for their institutions. In 2008 a successful conference, which attracted representatives from 11 diverse institutions, was held.

For more information see:

<http://www.tees.ac.uk/sections/schoolscolleges/meteor.cfm>

As stated previously it is difficult to predict what the predominant sectors will be in the future and what skills will be required. Developing sector-specific skills is a long term and ongoing aim, but in the short, indeed immediate, term there is much to be done around generic, transferable skills which will help enormously in developing the current and future workforce. Numerous studies, including the

research undertaken as part of this report, show that significant numbers of employers are concerned about the generic/employability skills of new recruits. Developing the future workforce is therefore not merely about encouraging more people to participate in higher education but also about ensuring that this participation includes in its remit key employability skills; the skills employers require. Higher Education develops flexible, adaptable individuals who are competent and innovative learners. However, graduates must also be supported to gain and continually develop the skills that are essential to the workplace and business. They need to continue to learn and to build on their knowledge and skills both in terms of depth *and* difference. Graduates need to be capable of honing what happens in the workplace and support for this could involve graduate business units designed to help individuals to innovate and develop business ideas, or the creation of appropriate post- graduate courses.

The Tees Valley must:

- Develop and enhance the widening participation activities delivered through HEIs and other agencies
 - Actively encourage more local employers to become involved
 - Nurture partnerships between universities, colleges, schools and employers
- Develop clear progression pathways
 - Schools, colleges and universities need to collaborate even more
 - Develop higher level apprenticeships
 - Develop more alternative/non traditional study options such as sponsored programmes
 - Improve the quality and amount of postgraduate provision available
- Develop enterprise and encourage innovation
 - More work placement options incorporated into degree programmes
 - Work with employers to develop more graduate training schemes and internships
 - Work towards all HE programmes containing assessed employability modules to ensure that graduates are work-ready, and adaptable – change is unavoidable
 - Encourage more graduates and businesses to participate in Knowledge Transfer Partnerships

4. Any higher level skills framework needs a dedicated communication strategy

The above recommendations are a good foundation upon which to build a higher level skills strategy/framework. However, from this research it is clear that developing clear communication channels and a joined up approach are essential to the success of any such framework. There needs to be greater understanding of what higher level skills are and clarity about what is available and what is required, not just in specific sectors but also across sectors.

A higher level skills framework for the Tees Valley needs a communication strategy that:

- Cultivates links between employers, providers and agencies
- Disseminates information more efficiently and effectively
- Articulates what higher level skills are and what they do for businesses and individuals
- Establishes standards for generic skills
- Establishes cross-sector forums
- Establishes graduate focus groups to learn from graduates' recent experiences of both HE and the jobs market
- Makes clear suggestions about how an individual might usefully re-skill (for example, How could an electrical engineer change focus to the wind turbine industry?)

In summarising the above points it is possible to identify a number of key messages that a Higher Level Skills Strategy must address but also future actions essential to driving forward a strategy for the Tees Valley.

Key messages

- Develop and publicise plain definitions of higher level skills
- Establish obvious lines of communication between all partners which promote an ongoing dialogue between all partners
- Extend and advertise progression routes
- Respond strategically to employer demand and the needs of the economy
- Education providers, Businesses and Intermediaries continue to build meaningful relationships
- Maximise on new opportunities, (and funding) using existing strengths and striving for excellence in growing and future industries
- Help to equip the workforce with the skills needed for the future, in a rapidly changing society
- Businesses are increasingly diversifying to survive – this means *new* skills, as well as improving existing ones
- Address the issues of an ageing workforce – learn from existing best practice around mentoring
- Consider the differing character traits and attitudes between generations
- Further develop non traditional, part-time and alternative routes into higher education
- Develop high quality Advice & Guidance which is easily accessible and joined up across age range, fostering a culture where lifelong learning and career development are the norm

- Make a wide range of skills training available – from subject-specific to transferable/generic/employability/personal/community etc
- Work in line with local, regional, national and international plans and priorities

Future actions

- Utilise data more effectively to inform strategic decisions by undertaking an annual skills survey in the Tees Valley
- Undertake some research into the other key Tees Valley sectors to gain a broader view of the skills across the subregion
- Continue to Précis key documents (government policy etc), making them readily available to a wide audience, to help develop Tees Valley strategy within the context of the bigger picture
- Undertake some pilots to realise some of the key concepts mentioned above for example,
 - facilitate the use of 'Common Spaces' for networking, collaborating and sharing best practice – could be physical spaces and/or virtual
 - set up an online Skills Bank – in the style of 'Ask an Expert'
 - develop a series of initiatives to promote 'Entrepreneurship' more broadly – across all sectors

Concluding remarks

The skills agenda is still being widely debated across the UK (February 2010) and although the Government have published *Skills for Growth: The National Skills Strategy* (BIS [A](#) 2009) much work remains to be undertaken on how exactly this strategy will function within real workplaces and lives. Ongoing, current (and indeed local) findings need to be aligned with the National Skills Strategy to ensure that it works in the most useful and appropriate way, for example:

In 2010 the UK Commission for Employment and Skills will publish its first annual National Strategic Skills Audit. This will help identify skills needs at the national, regional, sub-regional and sectoral levels. Ministers will use this advice to set a national framework of priorities for skills, which will inform the regional skills strategies led by the RDAs ([BIS 2010: 24](#)).

The outcomes of this National Strategic Skills Audit will also inform HEFCE's funding plans. Much has been written in the last 12 months about the changing job opportunities the UK will experience in coming years and it seems fair to predict that in the future there will be new and different job roles and as a consequence diverse skills needs. There is a, 'rapidly growing market for the complex services, high value goods and innovative technological solutions demanded by industrial societies' ([BIS 2010:6](#)). This supports the need for ongoing research of the kind undertaken in this report, where local employers and employees are regularly surveyed, and responded to.

Opportunities for growth in the UK must be 'shared widely across both regions and individuals' (BIS 2010:6) and the only way to ensure this is by systematically both reviewing the real, likely future demand for skills across sectors and job roles, existing and emerging. Universities are seen as having, 'the ability to generate new knowledge and transform it into economic growth through innovative new products, processes and solutions' (BIS 2010:2) and it is crucial that they continue to build on the existing good relationships they have with business as well as striving to form new alliances.

Developing the future workforce is therefore not merely about encouraging more people to participate in higher education but also about ensuring that this participation includes in its remit key employability skills; the skills employers require. Higher Education develops flexible, adaptable individuals who are competent and innovative learners. However, graduates must also be supported to gain and continually develop the skills that are essential to the workplace and business. They need to continue to learn and to build on their knowledge and skills both in terms of depth *and* difference. Graduates need to be capable of honing what happens in the workplace and support for this could involve graduate business units designed to help individuals to innovate and develop business ideas, or the creation of appropriate post-graduate courses.

Appendix 1: Policy Context

In recent years the skills agenda has featured in many local and national documents; with an intensified proliferation of these appearing from national government in 2009. This appendix provides condensed overviews of some of the key, recent publications; a speedier route into the important detail of this debate without requiring you to study the entire reports – which in some cases are very lengthy. Full details are given for all of this literature in the report's Work Cited and Background Reading lists (p86), including web-links to facilitate the ongoing reference which such significant, and in some cases complex, documents demand.

Chronologically the earliest national publications is the Leitch Review - Prosperity for all in the global economy, world class skills (2006), a seminal document which remains valid today; the common and continuing themes from the review which run through current policy, are very apparent. These key themes include: rapid technological innovation; the ageing population and workforce; the connections between a highly skilled workforce and productivity/profitability and the need to continually enhance and refine existing training and qualifications (in line with market intelligence) rather than waste resources constantly creating something 'new'. The review famously reported that 70% of the 2020 working population had already left school, making employees the major audience of any skills strategy.

However, as with all statistics, it is possible to interpret some of the review's findings in differing ways and some of its targets have since been branded unrealistic and unachievable. It is clear that more research needs to be undertaken into *how* to raise the skills levels of the population, rather than setting, in some cases, unrealistically high targets for the workforce to futilely struggle towards. One of the review's main aims was for 40% of adults to be qualified to L4 by 2020 (29% in 2005) and current figures suggest that this aim should be achieved. However, more recent publications – such as UKCES Ambition 2020 (2009) claim that many of the other predictions of the review are unlikely to happen. This includes the UK raising its global position to within the top 8 countries. *Ambition 2020* suggests that this would require more than 20 million new qualifications to be obtained. However, despite controversy around some of the Leitch aims and figures the aspiration of the report was commendable and it gives an excellent starting point for this literature review.

1. Department for Business, Innovation and Skills (2009) ***Skills for Growth: The National Skills Strategy*** (London: The Stationery Office).
2. Department for Business, Innovation and Skills (2009) ***Higher Ambitions: The Future of Universities in a Knowledge Economy*** [available online].
3. Universities UK (2009) ***From Recession to Recovery*** (London: Universities UK).
4. Department for Business, Enterprise and Regulatory Reform (2009) ***New Industry, New Jobs*** [available online].
5. Centre for Enterprise (2009) ***Using Demand to Shape Supply: An Assessment of the Higher Level Skills Needs of Employers in England – A Report to HEFCE*** (Leicester: CFE).

6. Department for Innovation, Universities and Skills (2008) ***Higher Education at Work. High Skills: High Value*** [available online].
7. Department for Innovation, Universities and Skills (2007) ***World Class Skills: Implementing the Leitch Review of Skills in England*** (London: The Stationery Office).
8. Leitch, S (2006) ***Review of Skills: Prosperity for All in the Global Economy – World Class Skills*** (London: Her Majesty's Stationery Office)
9. Tees Valley Unlimited (2009) ***Business Plan 2009 – 2012*** (Middlesbrough: Tees Valley Joint Strategy Unit).
10. Skills North East (September 2008) ***A Regional Strategic Framework for Higher Level Skills*** (Newcastle upon Tyne: Skills North East).
11. One North East (2006) ***Leading the Way: Regional Economic Strategy 2006 -2016*** (Newcastle upon Tyne: One North East).

Skills for Growth: The National Skills Strategy (November 2009)

Department of Business, Innovation and Skills (London: The Stationery Office)

Context:

- The majority of the UK's 2020 workforce are already in employment
- Economic recovery and long-term prosperity in the UK depends upon ensuring employees have the right higher-level skills
- The Government are moving towards an over-arching skills system which seamlessly combines skills and university system
- Accessibility and flexibility are key to future higher-level skills training opportunities

6 Main Strands:

Promoting Skills for Economic Competitiveness

- Target is 75 per cent of all 18-30 year olds in HE or trained in advanced vocational skills (L 3 & 4)
- Advanced apprenticeships and creation of equivalent technician level courses are priorities
- Measure achievements of industry-approved vocational qualifications
- BUT, qualifications are not more important than acquiring new skills
- Progress/success measured with 'national scorecard'
- Criteria for scorecard? - matching skills supply to business demand; delivering skills training which improves productivity; measuring the impact of skills training on subsequent employability and earnings

Expanding the Apprenticeship System to Build a New Technician Class

- Approx 35,000 new advanced and higher level apprenticeships over the next two years 'Funding to support this will rise from £17 million in 2010-11 to £115 million in 2014-15' (p.10)
- University Technical Colleges (UTC) to be developed
- Appropriate progression opportunities to advanced apprenticeships and foundation degrees to be available to UTC learners
- Launch of *Apprenticeships, Skills Children and Learning Bill*
- Progression to higher education from non-academic routes is low
- Bridging modules, flexible learning opportunities (part-time and work-based courses), HEIs and Employers need to develop these collaboratively
- Scholarships of up to £1000 to 1000 apprentices to encourage progression to HE
- Level 4 apprenticeship frameworks will increase through pilots of vocational/apprentice honours and masters programmes
- Explicit routes into HE and UCAS tariff point frameworks will be introduced from **April 2011** for Level 3 and 4 apprenticeships

Ensuring the System Responds to Demand from Business, While Better Supporting Key Sectors

- Demand-led system which focuses skills in the areas of the economy which offer opportunities for high growth and high employment
- Develop a Skills Funding Agency - **April 2010** - £100 million to fund 160,000 training and skills places - Levels 2 & 3 in priority sector, such as life sciences, digital media and technology, advanced manufacturing, engineering

construction and low carbon energy

- Aim to rely less on migrant workers; use the shortage occupation analysis of the Migration Advisory Committee to ensure the skills system is responding to current needs and future demands
- Regional Development Agencies (RDA) take responsibility for regional skills strategies; 'articulate employer demand and more closely align skills priorities with economic development' (p.12)
- £100 million – including £50 million from employers – to support 75,000 training opportunities at advanced vocational levels (3 and 4). This pilot Joint Investment Scheme (Government, sector skills councils and employers) will focus on the priority sectors and allow employers to select the provider they think most appropriate for their training and skills needs
- The fifth competitive round of the National Skills Academy Programme. £16 million of public revenue will be available during **2010-11**

Empowering all Adults to Equip Themselves for Future Jobs

- Skills accounts will be used (with endorsed providers) to raise awareness of training entitlements and choices about how, what and where to study
- Skills accounts will also support people on out-of-work benefits. Employment White Paper – **forthcoming**.
- User-friendly 'traffic light' system will rank every provider and course. Quality; customer satisfaction; likely wage gains and providers' records for getting people into employment will be used to develop the system
- Develop "Qualify with Business" - learners gain trade-related skills and practical support with starting up their own business

Raising Recognition Among Business of the Value of Investing in Workforce Skills to Improve Productivity

- Develop the skills and potential within the existing workforce
- Businesses will be encouraged to make better use of employees currently working below their potential
- The UK Commission of high performance working reviews; the RDA; Business Links Diagnostics and so on will have input into these recommendations
- Implement the employees legal right to request time to train
- Implement new occupational licensing agreements

Improving the Quality of Provision within a Simpler Skills System

- The college report card - **2011** – will monitor and assess quality
- Funding allocations will be more focused on labour market outcomes and career progression; less driven by multiple qualification targets
- Reduce the publicly funded skills agencies by 30 over the next three years, including:
 - Convert the Learning & Skills Improvement Service into a sector owned body
 - Shift funding for quality improvement and workforce development to training and learning providers
 - Cease the operation of IiP UK
 - End the QCDA's role in adult qualifications
 - Reduce the number of Sector Skills Councils
 - Cease the operation of nine regional Learning and Skills Councils

Higher Ambitions: The Future of Universities in a Knowledge Economy (November 2009)

Department of Business, Innovations and Skills (London: The Stationery Office)

Context:

- Over the last decade the British higher education system has worked towards the Government's aspirations for social justice, social mobility and economic competitiveness
- Economic output of UK universities is estimated at £59 billion per year
- Research excellence is a key aspect to this success. UK institutions account for 12 per cent of the world's scientific citation (2007/08) and 33 per cent of its published research in Arts and Humanities (2006/08)
- Learning and teaching quality is also of a high standard – demonstrable through National Student Survey scores and international standing
- Over the last 10 years student numbers have increased substantially
- HOWEVER, the UK's OECD ranking for participation in HE has dropped from 7th to 15th over the last 11 years
- Expectations for higher education are changing
- The main aim of this framework is to set out how the HE sector can continue to work towards wider participation and further improve quality and excellence within the current economic circumstances

6 Main Strands:

Promote wider and fairer access to higher education.

- Part of the Government's response to *Unleashing Aspiration: The Final Report of the Panel on Fair Access to the Professions* (Milburn, 2009)
- Aim to raise the potential of the 2020 workforce
- Continued commitment to both the target for 50 per cent participation in HE, and 40 per cent of adult population qualified to level four or above
- Improve progression opportunities from FE to HE level learning
- Develop an increased range of course models, course types and modes of study that "reflect the reality of modern life" (p.11) – Accessibility, flexibility and demand-led provision are key to ensuring HE appeals to a greater diversity of students
- Strengthen partnerships between schools, colleges and universities to improve local access and foster the aspirations of non-traditional and/or first generation students
- Partnerships will also aim to improve the advice, encouragement and support offered to these students. **Specific plans forthcoming**
- Encourage **all** universities to utilise appropriate contextual data during their admissions process to identify high-potential candidates from under-privileged backgrounds
- Ensure prestigious institutions support this agenda so that progress is more evenly distributed across the sector
- The Director of Fair Access, Sir Martin Harris, will consult with university Vice Chancellors and advise on further ways to promote wider and fairer access to higher education **Commencing Spring 2010**

Support universities to contribute to economic growth and recovery

- Emphasis on a demand-led system and the commercial application of knowledge generation and skills
- Aim to increase the level of competition between universities for HEFCE funding. Priority will be given to institutions developing HE programmes in disciplines where higher level skills are needed to foster growth and employment, but are currently lacking
- Institutions with programmes outside priority areas will see their HEFCE funding decrease
- The UK Commission for Employment and Skills is set to ensure that each university offers demand-led programmes that are based on business needs, and also monitor sector/discipline specific skills gaps
- All universities will be expected "to describe how they enhance students' employability" (p.13)
- Business will be encouraged to play a greater role in the design and funding of HE level programmes
- "Ensure that postgraduate level higher education meets both the sector's and the economy's needs for skills" (p.14). Strategies to achieve this will be based on Professor Adrian Smith's forthcoming review of postgraduate higher education

Strengthen the research capacity and subsequent economic impact of universities

- Science and research budget will rise to £4 billion by 2010/11
- Research excellence and the concentration of research in key areas will continue to be decisive factors when allocating funding
- Collaborative research (by multidisciplinary research centres and between universities and industry) will also attract greater funding opportunities and ensure "the best researchers can cooperate rather than compete against each other for scarce funds" (p.15)
- Research Councils, the Technology Strategy Board and the HEFCE Higher Education Innovation Fund (ECIF) will continue to fund collaborative research between universities and business
- HEFCE's new Research Excellence Framework (REF) will assess institutions against the economic and social impact of their research

Promote Excellence in Teaching

- Full proposal is set out in *Students and Universities* (October 2009), the Government's response to the report from the Innovation, Universities, Science and Skills Select Committee
- "Excellence in teaching should be recognised and rewarded" (p.17)
- Quality review process will be revised and simplified
- **All** universities to publish information relating to the nature and quality of programmes, and the subsequent employment prospects they offer - HEFCE, the QAA and UKCES will advise on how best to ensure this information is comparable across the sector
- Support university-led strategies that strengthen the role of and confidence in the external examiner system

Engage with local communities and the wider world

- Continued institutional autonomy. RDA assistance and the support of business engagement and knowledge transfer activities will sustain the role of universities in local economic development and regeneration

- Increase and widen HE participation by creating more opportunities to study closer to home (for example, HE in FE)
- Encourage institutional commitment to “attracting students from abroad; collaborating with institutions overseas; and bringing their expertise to bear on global challenges” (p.19)
- Government will “champion international standing of universities” (p.19)
- Competitive HEFCE funding and Government task force will support and strengthen transnational education market position

Maintain excellence under tighter financial constraints

- Develop strategic funding streams that focus on and further enhance excellence – universities will only be supported to pursue activities in which they can achieve excellence
- Private investment and the redistribution of existing funds will support new priorities
- Review of fee structure

Jobs for the Future (September 2009)

Department of Business, Innovation and Skills (London: The Stationery Office)

Context:

- Job creation and employment growth are key to Britain's economic recovery and future prosperity
- Prompt Government action during 2009 helped to ensure that the economy can respond to various opportunities and challenges, measures include:
 - Protecting approximately half a million jobs through fiscal policy and monetary policy action
 - £5 billion investment to support the unemployed to return to work
 - Launching the Backing Young Britain campaign, and encouraging private, public and voluntary organisations to support the initiative
 - Creating the new Futures Jobs Fund - £1 billion to create 150,000 new jobs (100,000 for young people)
 - Increasing funding for Jobcentre Plus
 - Providing additional support to those threatened by redundancy or newly unemployed
- Approximately 29 million people in employment – a 2.5 million increase on 1997 figures
- Continuing shift, in both output and employment, away from manufacturing to the service sector
- The public sector, ICT support, business and financial services as well as services relating to sport, retail, recreation and culture have seen significant gains in employment over the last two decades
- HOWEVER, employment in many of these industries has felt the negative effects of the current economic climate
- Employment in both manufacturing and construction is also highlighted as being significantly damaged by the recession
- The Government are looking to improve this situation by building on the industrial policies for future success set out in *Building Britain's Future: New Industry, New Jobs* (2009)
- Knowledge is the key to economic recovery and global competitiveness - a further 1.5 million high-skilled jobs will be created over the coming years
- *Jobs for the Future* outlines where opportunities for growth are expected
- Innovation, finance, infrastructure and skills within particular sectors, markets and technologies are key priority areas for action

There are 8 Priority Sectors:

1. The Low Carbon Economy

- Supported by the ***Low Carbon Industrial Strategy (2009)***.
- The Government are looking to increase the UK's 3.5 per cent share of the global market for low carbon and environmental goods; to help increase the sector's economic contribution beyond £106 million and employment to over 880,000

- The anticipated 4 per cent growth in the UK's domestic low carbon economy over the next six years could also bring with it an additional 400,000 jobs
- £1.4 billion of new Government investment will be available to help the North East and the South West of England to become specialist low carbon economic areas
- Collaboration between business and educational providers will move this agenda forward by identifying and developing appropriate higher level skills, driving innovation and attracting investment

2. Advanced Manufacturing

- High-skilled manufacturing makes a significant contribution to UK employment, GDP, R&D investment and exports
- Following the publication of the *Advanced Manufacturing Strategy* (2008), '£150 million targeted investment to help increase access to information and support, boost our manufacturing skills base, encourage the take up of new technologies and tackle challenges faced by specific manufacturing sectors' (p.12). Measures include:
 - £45 million investment in three new aerospace and one new nuclear facility to be built in UK – creating and sustaining 800 jobs
 - £45 million to support research and development of low-carbon aircraft engines
 - £12 million expansion of Printable Electronics Centre – creating approximately 1,500 jobs
 - Improving business efficiency and productivity through £4 million investment to expand the Manufacturing Advisory Service
 - Supporting the creation of 100 jobs through £500,000 funding for innovation in the microelectronics design sector
 - Creating and sustaining 1,200 jobs by supporting Airbus to become the world leader in wing, landing gear and fuel integration systems

3. Life Sciences

- The UK life sciences currently supports:
 - 67,000 jobs - pharmaceutical sector - 'many in highly skilled areas' (p.13)
 - 20,000 jobs - medical biotechnology sector
 - 50,000 jobs - medical technology industry
- Over the coming years the world market growth within the sector is envisaged to be between 8 and 12 percent per year
- The Government are looking to take advantage of these developments and increase the UK's share of the global market through high-calibre skilled employees
- Further details can be found in *Life Sciences Blueprint* (2008)

4. Digital Economy and Creative Industries

- Building on current success and new global opportunities, both output and employment through broadcasting, the creative industries and information and communication technologies (ICT) is set to increase over the next ten years

- Sub-sectors such as games, TV and radio, green IT, communications and telecoms are identified as areas where global growth will continue
- Employment in high skills/professional occupations in certain sub-sectors is expected to increase by up to 1.9 per cent per year over the next 6 years
- *Digital Britain Final Report* (2009) sets out the Government's support and investment strategy for enhancing the UK's global economic competitiveness within digital and creative industries

5. Business and Professional Services

- Currently employs approximately 5 million people in the UK
- Changes in the sector have led to increases in both the availability and the development of highly skilled business and professional service jobs
- The Government acknowledge that the current recession has had a major impact on this sector
- HOWEVER, the implementation of the EU Services Directive and support from the Chancellor's High Level Group on City Competitiveness will help strengthen our position within the global market and generate approximately £5 billion per year and 81,000 jobs for the UK

6. The Care Sector

- Currently 840,000 people employed in childcare occupations – an increase of almost 40 per cent over the last 10 years
- Growth in the care sector is expected to continue over the next 10 years as more women return to work and the number of UK citizens aged 80 increases by a further 25 per cent
- Up-skilling sub-sector workforces at all levels is a key Government priority.
- Further information on how the Government will improve the quality of childcare services in the UK by up-skilling the workforce is set out in *Next Steps for Early Learning and Childcare* (2009)

7. The Retail Sector

- The retail sector currently employs 2.8 million people – 25 per cent of whom are in highly skilled occupations
- Despite restrained consumer spending and a fall in consumer demand 'the sector will remain an important source of employment across the country' (p.17)
- The Government will look to increase the productivity of the sector by tackling skills gaps within the existing workforce
- It will also look at ways to ensure newly employed people have appropriate skills

8. Tourism, Hospitality and Leisure Sectors

- 'Tourism and associated hospitality now account for over 8 per cent of the UK's GDP and employ 2.6 million people' (p.18)
- The Government anticipate long-term economic growth in this sector – 'spending by overseas and domestic residents forecast to double, up to 200,000 jobs and could be added to this sector in the next decade' (p.18)
- Highly-trained, multi-skilled workers of all skills levels will be required to work as ambassadors and enhance the reputation of the sector, both nationally and internationally

Better Routes to Employment

- Social care, retail, tourism, hospitality and leisure are cited as key sectors offering job opportunities for the unemployed, especially if those already in these sectors are further developed to progress
- A partnership between the Department for Work and Pensions, Sector Skills Councils and Job Centre Plus is currently helping 100,000 long-term unemployed young people access jobs
- 50,000 CareFirst traineeships will be available – offering ‘sustained employment and training to young people who have been out of work for up to 12 months, giving them the skills and experience they need for a permanent career in the sector’ (p.19)
- The Government, People First and other Sector Skills Councils will work together to develop training and career opportunities for young people within leisure, retail, tourism, and hospitality industries

Equipping for Jobs of the Future

- Social and economic mobility are key drivers behind the Government’s campaign for a higher-skilled workforce
- The UK needs high skilled workers in all sectors
- HOWEVER, with their potential for high growth, the Government will give focussed support towards knowledge-based industries
- Government investment in education and skills will continue. Specifically:
 - £5 billion directed towards improving adult skills, including £925 million in the Train to Gain programme
 - Expanding apprenticeships - £1 billion funding for 2009
 - ‘Refreshing’ and building on the success of the Skills for Life Strategy to work towards ambition of 95 per cent adult literacy and numeracy by 2020 – supported by £1 billion funding in 2009/10
- Significant Government investment in both the further education and the higher education sectors
- The first National Strategic Skills Audit to be completed in 2010 – helping identify existing and future skills needs
- Further details can be found in the *Annual National Skills Strategy 2010-11*(2009)

From Recession to Recovery (July 2009)

Universities UK (London: Universities UK)

Summary:

- As the demand for graduates continues to increase universities play a major role in the path out of recession and in shaping the post-recession UK, by helping students, graduates and businesses to adapt to economic reality
- This includes building on strengths in teaching, research and knowledge exchange; and generating ideas and helping businesses to apply them
- Graduates must be equipped to respond and adapt to changing demands – as it becomes harder to obtain the job they want, and as new industries form
- The speed of developments makes it hard to predict areas of competition and economic opportunity
- A broad base in established university teaching, research and expertise helps with the speedy exploitation of new areas
- Some growing subjects, such as: climate change; fossil fuels; behaviour and consumption patterns are already existing areas of strength in UK HEIs
- The workforce of the future needs to be highly qualified to cope with the high-tech and high value-added products and services that UK society will require
- The UK still lags behind key competitors (for Leitch targets – see p.63)
- The UK's low overall level of skills contributes to *poor* productivity and performance; business/university collaboration is associated with *increased* productivity
- HEFCE's Economic Challenge Investment Fund (ECIF) will assist (via 78 bids) 51,000 people and 11,700 businesses in the form of: internships and work placements for graduates; short targeted courses; vouchers for unemployed for training; help with looking for work and so on. Businesses will also benefit from: courses for workers on reduced hours; financial skills placements; research expertise for new product and process design and so on.
www.hefce.ac.uk
- Universities are major employers – employing 1.2% of the total UK workforce nationally, often the largest local employer
- Universities are major purchasers of goods and services and are helping other businesses survive by reducing payment times, bringing forward buildings and so on
- 93% of universities now have a dedicated single enquiry point for SMEs
- Patents granted to universities have more than doubled in the last 10 years
- The income to universities from knowledge exchange activities was £10.3 billion (appx.) in the period 2001–07
- 84% of large firms responding to a recent CBI survey had links with universities; a further 10% plan to develop them
- The UK's share of the world's most influential academic research papers has increased from 12.9% to 13.4% in 2 years
- Most employers don't think there will be enough skilled people to meet their future needs (CBI/Edexcel Education and Skills Survey - 2008)
- By 2020 30% of the working age population will be over 50
- Only a quarter of adults in the UK hold a degree level qualification (just above the OECD average)
- The Higher Education Business and community Interaction Survey (HEBCIS) has charted the increase in universities' responsiveness to business needs

- Universities generate in excess of £45 billion for the UK economy

New Industry, New Jobs (April 2009)

Department for Business, Enterprise & Regulatory Reform [available online]

Summary:

- The vision of the Government in DTI (1998) *Building the Knowledge Driven Economy* remains. Some updates include:
 - The crucial need for UK employers/employees to be active, dynamic and 'clever' about how markets work
 - The Government role in shaping markets & driving innovation
 - Tailoring certain public policy, including a ***national skills strategy (2009)***
 - Cultural changes in the ways that Government policies are implemented – for example, the Government must consider the impact on business of its actions
- There is a vital need to improve skills and adaptability
- Government, businesses, education providers & wider society need to be 'active' in order to drive and grow the UK economy
- Innovation and creativity across the board are key factors in recovering from recession and building for a successful future – workers will be required for sectors and sub-sectors that perhaps don't exist yet
- There demand is increasing for low carbon goods and services and improvements in energy and resource efficiency
- The rapid increase in the under 25 age group in the developing world is creating a bigger global market for education
- There is a need for increased partnership working between companies and between industry and education – to jointly produce goods and ideas
- There will be increasing numbers of female workers – child and family friendly options will be vital
- New qualifications need to be created promptly to fulfil appropriate demand
- There are a plethora of recent, or shortly to be launched, Government publications/initiatives, including:
 - *Higher Education Framework* (December 2009)
 - *Active Skills Paper* to be published detailing how skills system will support developing policies (written in consultation with employers, Sector Skills Councils and the UK Commission of Employment and Skills)
 - Formation of Local & Multi-area agreements and Employment & Skills Boards
 - The Infrastructure Planning Commission will offer advice to potential applicants from Autumn 2009, commencing officially in Spring 2010
 - BERR and DCMS (2009) *Digital Britain*
 - Broadband – every home and business in Britain to have access to high speed broadband in the next three years
 - Summer 2009 proposals will be published for adapting Britain's energy grid to link homes and businesses to new forms of power generation – renewable, nuclear and so on
 - Council for Science and Technology, new national infrastructure; seamless, modern, integrated to meet global challenges
 - Soon to review whether and in what form further intervention could help increase the supply of long term growth capital to SMEs

- All applications to Research Councils for academic funding will now have to set out the economic impact of proposed research
- The new Research Excellence Framework will take greater account of the economic value of research (details early 2010, prior to first framework exercise in 2013).
- The Export Credit Guarantee Department (ECGD) are consulting on ways of further supporting levels of credit for UK exporters. The Government will ensure that the support offered by ECGD plays a significant role for UK exporters when demand picks up.
- Autumn 2009 the UK Commission for Employment and Skills (UKCES) will publish its recommendations for delivering a simplified and effective skills service for business.
- Following on the success of the Government's recent *Manufacturing Strategy* and *Creative Industries Strategy* a closer sectoral focus is being adopted and in the next few months (Summer 2009) opportunities and constraints present for UK businesses in British and global markets in a range of key areas will be analysed. The list given is not exhaustive: Low Carbon Industrial Strategy; Ultra low carbon vehicles; Digital Britain; Life sciences and pharmaceuticals; Advanced manufacturing; Professional and financial services; Engineering construction; Industrial opportunities in an ageing society
- Summer 2009 the Government will consult on regional strategies in England, setting out a single set of strategic priorities for national, regional and local delivery. The Government will also announce city-region pilots which will develop mechanisms supporting economic development and business engagement at the city-region level.

Using Demand to Shape Supply: An Assessment of the Higher Level Skills Needs of Employers in England – A Report to HEFCE (2009)

Centre for Enterprise (Leicester: CFE)

Summary:

- Based on research into the demand for higher level skills (HLS) training: East & West Midlands, Yorkshire and Humber regions
- 1,332, mostly private sector, businesses (with 25 employees+)
- 33% of respondents *had* undertaken HLS training in last 12 months
- Followed up survey with 10 focus groups with businesses
- Proposes that the supply of HLS training should be demand-led
- Definitions of what 'higher level skills' are can differ and require clarity
- Demand for HLS is stronger in the public and third sectors
- Few employers keep detailed data on training; even fewer distinguish between 'general' and 'higher level' skills
- The more staff involved the more likely HLS training is
- Universities have a larger share of the HLS training market than any other provider group and can build on these existing relationships
- The businesses HEIs are not working with often have no intention of undertaking any training
- Most businesses think that HLS training will result in a qualification
- Professional qualifications are more popular than academic/vocational
- The importance of cost when choosing a training provider has now increased
- HLS training has a positive impact on the majority of businesses
- HLS training must form part of an organisation's business strategy to be taken seriously
- 67% of respondents *had not* undertaken HLS training in the last year, but only a small number cited financial costs or lack of awareness as the reason
- Image of HEIs is often based on 'traditional' and/or outdated perceptions
- 1/3 of respondents who *had not* undertaken training indicated that they may do so in the coming year
- Higher level skills 'offer' must be based on solid market research
- HEIs' USP is the ability to design, create, accredit, deliver and award HE qualifications
- HEIs can grow their market share by better utilising the credit system
- HEIs must deliver to the same standard as private training providers
- Most businesses will meet some of the costs of HLS training
- Businesses will undertake more HLS training if it is part of a wider economic development strategy. This is reflected in the emerging government policy themes of 'skills activism' and 'industrial activism'
- HLS training needs to be sustainable and not undertaken with a short-term 'project' mentality

Higher Education at Work, High Skills: High Value (2008)

Department of Innovation, Universities and Skills [available online]

Summary:

- The Government has identified a social and economic imperative for more of the population to be equipped with higher level skills
- The current higher level skills strategy has 2 goals:
 - *to create more graduates (quantity) – who are in turn more employable (quality)*
 - *to raise the skills and capacity for innovation and enterprise of those already in the workforce*
- HEIs and businesses should work together to ensure appropriateness of courses; work placements and training
- Perhaps formally recognise (kite mark?) employers who invest in training?
- For HEIs to be more responsive to business requires a cultural change, need compelling case studies with quantifiable results to encourage this
- Need to promote Science, Technology, Engineering and Mathematics (STEM)
- Suggestion that unions could act as 'champions' of workplace learning; developing the role of Unionlearn and its representatives
- HEIs should provide a single point of contact for businesses to facilitate easy access (i.e. an account management system see [appendix 5](#))
- The credit accumulation system needs to be clearer
- Generic and transferable skills should be offered – not just subject-specific (for example, leadership, entrepreneurial and interpersonal skills)
- More courses to be offered in non-work environments and outside working hours and term/semester times
- The Alliance of Sector Skills Councils and the UK Commission for Employment and Skills (UKCES) to lead nationally on improved articulation of skills needs
- Funding models which foster collaboration and innovation to be reviewed
- A national structure for IAG with a more established role for SSCs
- Establish a database of work placement opportunities
- National survey of employers' skills needs to be undertaken sector by sector

World Class Skills: Implementing the Leitch Review of Skills in England (July 2007)

Department of Innovation, Universities and Skills (London: The Stationery Office)

Summary:

- The Government is committed to become a world leader in skills by 2020, benchmarked against the top quartile of OECD countries
- By 2014 36 % of adults to be qualified to level 4 and above
- By 2010/2011 the total amount of employer-focused funding for skills training should be around £1.3 billion
- Individuals and employers expected to take much more responsibility for improving their own skill sets and qualifications
- Need to demonstrate the link between economically valuable skills and getting good jobs and progressing in chosen career
- Need to remove barriers related to age, race, gender or class that may prevent fair and equal access to more training and education
- Treating employers and individual learners as the customers of the skills system is central to the idea of a demand-led approach
- The UK Commission will report to Government in 2010 on whether a statutory entitlement on training is needed (review of Skills Pledge)
- SSCs should encourage employers to play a leading role in the reform and development of vocational qualifications
- HEIs should facilitate employers having their own in-house training accredited through the Qualifications and Credit Framework
- Encourage HEIs to collaborate with employers in developing programmes & delivery methods to meet their HLS needs
- Employers should increase their investment in skills, training and qualifications at all levels
- Employers should articulate what their skills needs and priorities are, in order to support business development
- Aiming for a National Skills Academy (NSA) for each major sector
- Encouraging all employers in England to take responsibility for the skills of their workforce, by making a Skills Pledge
- At time of publication more than 150 employers - including all central Government Departments, the armed forces, the police force, Ford Motor Company, McDonalds, BT and Sainsbury's – had committed to the Pledge (1.7 million employees plus)
- Unions and employers should work together and build on the progress of Unionlearn
- Long term skills needs will only be met if young people (from school age) are equipped with the skills, competencies, understanding and attributes they need to succeed in a modern, sustainable economy

Prosperity for all in the global economy, world class skills (2006)

Leitch, S. (London: Her Majesty's Stationery Office)

Summary:

- UK businesses are finding it harder to compete in a developing global economy where the balance of power is shifting. This will continue
- The population of the UK is ageing
- Rapid technological innovations are occurring
- The review claims a link between skills, productivity and employment
- There is a need to both respond and adapt to change – linked to demand-led skills
- Employers and employees have to be prepared to pay (financially) towards study, training, learning opportunities
- The review calls for a focus on economically valuable skills
- The aim is for 40% of adults to be qualified to L4 by 2020 (29% in 2005)
- Develop/enhance existing structures – rather than re-invention
- 70% of 2020 working population already left school so employees are the main targets
- Closer links with SSCs

Review's definition of skills:

'Skills are capabilities and expertise in a particular occupation or activity. There are a large number of different types of skills and they can be split into a number of different categories. Basic skills, such as literacy and numeracy, and generic skills, such as team working and communication, are applicable in most jobs. Specific skills tend to be less transferable between occupations. Most occupations use a mix of different types of skills. The most common measures of skills are qualifications. On the job training in the workplace is a vital source of skills development and career progression (...) For individuals, they provide portability in the labour market, allowing them to demonstrate the skills they have acquired. For employers, they provide valuable signals when recruiting new workers and also motivate employees to complete their training. Qualifications form a major part of employer recruitment strategies, especially screening candidates prior to interview. As a result, the majority of individuals prefer studying towards a qualification and over one half of employers say they would like to support their employees to gain qualifications through staff training. Qualifications can be grouped into five different levels: full level 2 equates to 5 good GCSEs or their vocational equivalents, full level 3 to two or more A Levels and level 4 and above to degree level qualifications' (p.6).

Tees Valley Business Plan 2009-2011(2009)

Tees Valley Unlimited (Middlesbrough: Tees Valley Unlimited)

Produced by Tees Valley Unlimited (TVU) the Tees Valley Business Plan is a means of TVU articulating a clear vision for the Tees Valley economy. The overall ambition of TVU is:

Develop the Tees Valley economy faster than the UK economy, thus narrowing the gap in Gross Value Added.

The plan is set out along similar lines to the RES, in that it aims to ensure that the business infrastructure is in place, the right people are in businesses and that Tees Valley is seen as a good location to invest.

The key actions for business are:

- Manage and deliver the North South Tees Industrial Development Framework and Action Plan
- Develop and direct the action plan to respond to the effects of the recession in the Tees Valley
- Develop and implement a Business Enterprise Strategy for the Tees Valley and a Business Support Agreement
- Direct the development of the Tees Valley as part of a Centre for Excellence for Energy in the North East
- Support Corus with its attempts to secure the future of Teesside Cast Products
- Prepare on a contingency basis for any mothballing or downsizing of Corus
- Lobby for the reinstatement of the Heathrow flight

The first five outcomes under the business section are focussed on creating sustainable clusters in chemicals, digital and creative industries, engineering, logistics and low carbon economy. In this section the plan identifies that chemicals and process industries are crucial to the North East economy and that we need to recognise the links with the energy and low carbon industry

The key actions for **people** are:

- Deliver the Tees Valley Employability Framework
- Prepare a high level skills strategy

Some of the outcomes under this section are to ensure that the workforce are appropriately skilled to meet the need of existing and future business needs

Key actions for **place** are:

- Develop and manage the Tees Valley Growth Programme for housing
- Manage the delivery of the Tees Valley Housing Market renewal programme
- Develop a robust business case to justify intervention and investment in green infrastructure
- Develop and deliver a revised climate change strategy and action plan
- Manage the delivery of the Visit Tees Valley Area Tourism Package (ATP) including a wide range of projects

- Further development of the Area Action Plan (AAP) for the Tees Valley including a wide range of transport packages
- Implement Stage 1 of the Tees Valley Metro
- Implement Year 1 of the Tees Valley Bus Improvement Scheme

More specific performance measures follow the high level outcomes.

The report also sets out what has been achieved to date. The Business Plan refers to the region's economic assets and the contribution they have made not only to the regional but also national economy. It also outlines future investment; the construction of a heavy oil upgrader, the development of a progressive energy coal gasification plant and a number of biomass power stations. It outlines the potential for the advanced engineering sector and the logistics sector.

A Regional Strategic Framework for Higher Level Skills (Sept 2008)

HEFCE, ONE and LSC North East

The purpose of the Regional Framework for Higher Level Skills is to:

- Set the context for regional working between One Northeast, the Learning and Skills Council and HEFCE
- Provide clarity to delivery partners and the wider network on the key drivers for each organisation and the mechanisms for funding and investment
- Underpin an effective working relationship between ONE, LSC and HEFCE
- Underline the commitment of the three organisations to work collaboratively to address these drivers and priorities

The framework recognises that the "...region's competitiveness is reliant on business being able to attract, develop and retain and adaptable and highly skilled workforce" (p.2). Furthermore "Driving up the availability of high level skills, particularly in strategically important sectors, has become an imperative for the region" (p.2), necessitating a transformation of skills and learning. Radical step changes in our skills base are required (RES action plan).

The collective vision of the Regional Skills Partnership (RSP) is the provision of higher level skills across the region that addresses the aspirations of individuals, businesses and the North East economy. Both the supply and demand for skills needs to be addressed. More work needs to be done with employers and individuals to stimulate understanding of demand. There needs to be a good understanding of current priorities and future aspirations. Alongside this there needs to be a clarification of investment and aligning of funding. The regional framework sets out the funding principles of the three organisations.

Initially the RSP was responsible for identifying priorities and facilitating action on skills. This has since been refreshed and now provides a holistic approach to skills and employment activity. Key tasks of the RSP are:

- Higher level skills forum
- Bilateral relations
- Universities for the North East
- Association of Colleges HE Managers Network
- Skills Brokerage Transition Steering Group

The partnership recognises that there are still gaps and is looking to: build on existing relations; formalise themed activity groups; promote collaboration activity; and facilitate discussion on what can be achieved to fill these gaps. The framework then sets out its commitment for action and some objectives (aligned to the RES)

Leading the Way: Regional Economic Strategy 2006 -2016 (2006)

One North East (Newcastle upon Tyne: One North East)

The Regional Economic Strategy (RES) produced by One Northeast, is one of the overarching strategic documents in the North East. Complementing other regional strategies it provides the economic context and vision for the region, seeking to identify how greater prosperity will be delivered for the region. The vision of the RES is set out below.

"The North East will be a region where present and future generations have a high quality of life. It will be vibrant, self-reliant, ambitious and outward looking region featuring a dynamic economy, a healthy environment and a distinctive culture. Everyone will have the opportunity to realise their full potential."

The RES recognises the poor economic performance in the past and identifies that current forecasts for the region are negative because they are based on the region's historic performance. As a means of going forward the region needs to build on its strengths.

The RES is seen as a catalyst to "...capture a sense of future ambition and confidence for which we can take responsibility".

Interestingly the RES includes significant reference to city regions, stating that "In addition to their role as drivers of regional economies, city regions provide tool for analysis of regional priorities and issues, both in addressing market failures and creating market opportunities"... "As such we can utilise them within a regional framework, which can be used to analyse and provide evidence for the development of strategic priorities" (RES p 14). City regions, according to the RES, have a key role to play in driving wider regional and pan regional economic growth and productivity (RES p16).

In driving forward economic prosperity the Regional Economic Strategy identifies nine priority sectors:

- Chemicals and Pharmaceuticals
- Automotive
- Defence and Marine
- Food and Drink
- Energy
- Knowledge Intensive Business Services
- Tourism and Hospitality
- Commercial Creative
- Health and Social Care

The region needs to adopt policies that increase participation and productivity. The main target is to increase GVA per head from 80% to 90% of the UK average by 2016; to do this would require a significant step change. Whilst the city regions are a good starting point their priorities need to fit with those at a regional level and as a region we need to be more aspirational.

The Regional Economic Strategy is broken down into three sections; Business, People and Place, all of which are interlinked. **Business** focuses on the need to develop the business base by developing not only prioritised sectors but also an entrepreneurial culture. This section looks at how the region's businesses can become more productive as well as business support, not just specialist support but also generic business support. In the section the strategy refers to manufacturing as fundamentally important to the region. The strategy calls for innovation and creativity and sets out opportunities of structural change delivered through three pillars:

- Energy and the environment
- Healthcare and health sciences
- Process Industries

All of these pillars present significant opportunities as they are high value and growing sectors. It goes on to state that process industries "...are currently the most important within the region's economy in terms of wealth creation....and are fundamental to the economy of the Tees Valley. It also specially mentions the Wilton site and Netpark. In addition to these pillars the RES claims that "New digital technologies are key to the success of many business both within the 'three pillars' and wider.

The **People** section focuses more on skills and ensuring that people are actively involved in the workforce and is "...fundamental to levels of productivity and participation in the region" (RES p?). The region's economy continues to be characterised by low demand for skills and in order to prove the economy the region needs to improve the skills base. "A key priority is to move people up a 'skills value' chain into higher skilled jobs. In doing this however we must ensure that regional skills meet regional business needs. The key issues in relation to skills are increasing investment in higher level skills, developing a strong focus to ensure invest in skills in key growth and strategic sectors and ensure young people are appropriately skilled. In addition we also need to utilise the talents of those already in economy who are inactive. The Regional Skills Partnership is a key vehicle for driving the agenda articulated in the RES. The RES notes that much progress in relation to skills is dependent on incentive and access to progression routes, investment by employers and individuals and skills attained by young people. The region needs to increase the focus on higher level skills to meet business needs and target support where skills issues are key to the success of the region's strategically important sectors.

The central theme of **Place** is developing the region to ensure that location is attractive and beneficially to business and economic growth. Place should support both business and people. The section focuses on investment in facilities in the strategically important sectors and ICT connectivity. A case study in this section is Teesport and the logistics sector.

The RES finishes by reiterating the ambitious targets for 2016 stating that the economic powerhouses of the region will be located in the urban cores of Tyne and Wear and Tees Valley.

Appendix 2: Questionnaire

Below is a summary of the questions put to companies and key data about the businesses themselves. The main findings from the questionnaire are discussed in the main part of the report and drawn out in the key research findings boxes interspersed throughout the report.

Questions

- Company details
 - name
 - sector
 - age
 - size (1-10, 11-50, 51-100, 101-150, 151-200, 201-250, 250+)
- Apprentices or trainees recruited in the last 12 months
- Number of employees by highest academic qualification
- Number of employees *operating* at Level 4 or above but without holding a formal qualification
- Number of employees qualified/skilled to the level below HLS
- Number of employees suitable for progression to Level 4?
- Details of company participation in HLS training (last 12 months):
 - types of courses
 - types and numbers of employees participating
 - location of training
 - assessment methods
 - qualifications gained
 - funding/fee arrangements
 - training provider
 - influencing factors on choice of training provider
- Impact of training on the businesses
- Reasons for not participating in higher level training
- Details of future business developments
- Details of future planned higher level training
- Details of future desired training opportunities

Key company/sector data

Sector	% of respondents
Advanced Engineering/Process Industries	65%
Logistics	5%
Digital Media	22%
Other	8%

No. of employees	%
1-10	47.2%
11-50	19.4%
51-100	8.3%
101-150	0
151-200	2.8%
201-250	5.6%
250+	16.7%

Size of company	Advanced Eng/Process Industries	Logistics	Digital Media
1-10	37.5%	0	100%
11-50	29.2%	0	0
51-100	4.2%	50%	0
101-150	0	0	0
151-200	4.2%	0	0
201-250	4.2%	0	0
250+	20.8%	50%	0

Age of company	%
Less than 18 months	8.3%
18 months to less than 36 months	16.7%
3-5 years	13.9%
6-10 years	13.9%
More than 10 years	47.2%

Company age	Advanced Eng/Process Industries	Logistics	Digital Media
Less than 18 months	0.8%	0	0
18 months to less than 36 months	0.8%	0	50%
3-5 years	12.5%	0	25%
6-10 years	12.5%	0	25%
More than 10 years	58%	100%	0

Appendix 3: SWOT Analyses from Tees Valley Economic Assessment (TVU, 2009)

Strengths	Weaknesses
Good support for business start ups	The Tees Valley is Polycentric , making it harder to compete with cities in attracting investment from knowledge-based businesses (i.e: high level financial services)
Good availability of competitively priced skilled labour: a flexible workforce with an emphasis on NVQ 2 and 3 qualifications and apprenticeships in particular	An ageing population with relatively poor health: exacerbates demands on public services, particularly in health and social care
Excellent Specialist Training Providers: including two top class universities and further education colleges with a history of engaging with local business	Loss of skills of older workers in declining sectors who take early retirement
Good infrastructure and communications: ports, rail links, airport, roads, pipelines, broadband, plus integrated industrial areas with good availability of local resources	Under-representation of higher skill levels: potentially making it harder to attract the type of 'knowledge sector' industries required to promote future economic growth
Significant Investment in 'Place Making': the development of the Urban Renaissance projects across Tees Valley (Stockton - Middlesbrough Initiative, Darlington Gateway, Coastal Arc and Skylink Business Park) have significantly contributed in creating an environment in which businesses want to invest and people want to visit	A lack of social mobility and job readiness: linked to high levels of worklessness, deprivation and inequality across the sub-region
Development of the groundbreaking Tees Valley Green Infrastructure Strategy to enhance quality of place for existing and future communities and potential investors, improve the environment and enhance biodiversity	A rising proportion of single person households: impacts on housing, transport and quality of life services in particular
	The 'Tees Valley' is not recognised as an area although improvements have been made in recent years

Opportunities	Threats
Continued growth in the Low Carbon Economy: building on the existing industrial infrastructure and developing Carbon Capture and Storage, nuclear and renewable energy sources will significantly reduce cost of complying with the Emissions Trading Scheme. £4 billion of investment in large renewable energy and biofuels and the £60 million allocated by government will help this transition	The effect of the global market on production industries, particularly the impending closure of Teesside Cast Products and the effect of the rising energy costs and the subsequent effects of the Emissions Trading Scheme
Continued growth of the Digital Economy following the opening of the Institute for Digital Innovation at Teesside University and Boho	The impact of the recent recession on new business and business growth has led to increased unemployment, benefit dependency and a fall in economic and social mobility; recovery may prove difficult
Growth in other Key Industries: including Construction, low level Financial Services functions, Logistics, Scientific Research & Development, Recycling, Leisure and Recreation and Other Business Activities (including call centres)	Creating a more resilient economy is challenging: half of production and employment is attributable to national and multinational business - relocating to areas outside the Tees Valley is a continued threat
Public Sector Relocations: potential for government jobs to be re-located to the Tees Valley from the South East	Expected significant cuts in public sector expenditure in response to the government's need to reduce debt incurred in combating the global recession will lead to significant job losses
The availability and expansion of high-speed broadband with the potential to offer greater flexibility in employment patterns, working from home and business in rural areas. This may be of particular importance for the growth of small and medium sized enterprises	The threat to reduce university funding by almost half a billion pounds nationally could lead to job losses, skill shortages and a reduced ability to engage with business
Development of the 'Place Making' agenda: Continued investment and development of Urban Renaissance projects, plus the expansion of Teesport and development of a deep sea container terminal will see increased activity in the area.	Further delays in Tees valley flagship regeneration developments due to the recent economic downturn

The development of the Tees Valley Metro Scheme will improve connections of the workforce to employment, particularly those living in deprived and disadvantaged areas, and improve freight links	
	Outdated and inappropriate business premises fail to attract necessary investment

Appendix 4: Examples of HEBP Provision

Key to delivery site (all awards Teesside University):

Middlesbrough College (M)
Darlington College (D)

Hartlepool College of Further Education (H)
Stockton Riverside College (S)

Redcar & Cleveland College (R)
Teesside University (T)

Digital		
- Music Technology (Fd), (M)	- Radio Production (Fd), (D)	- Journalism (Fd), (D)
- Performance & Events Production (Fd), (S)	- Computing (Networking) (Fd), (D)	- Digital Media (Fd), (D)
- Media & Music Technology (BSc) (M)	- Digital Technologies for Learning (MSc)	- Newspaper Journalism, (D)
- Professional Diploma in Marketing, (D)	- PG Diploma in Marketing, (D)	- Graphic Design (BA), (T)
- Graphic Design (Advertising) (BA) (T)	- Graphic Design (Illustration) (BA), (T)	- Graphic Design (Multimedia & Web Publishing) (BA), (T)
- Interior Architecture & Design (BA) (T)	- Fine Art (BA), (T)	- Journalism (BA), (T)
- E Media (BA) (T)	- Broadcast Media Production (BA), (T)	- Media Studies (BA), (T)
- Television Production (MA), (T)	- Television & Film Production (BA), (T)	- Computer Studies (BSc), (T)
- Computing (IT) (HNC/D) (T)	- Computer Games Art (Vehicle) (MA), (T)	- Web Development (HNC/D), (T)
- Computer Games Art (Character) (MA), (T)	- Computer Games Art (Animation) (MA), (T)	- Web Design (HNC/D), (T)
- Computer Games Programming (MA), (T)	- Concept Art for Games & Animation (MA), (T)	- Journalism (MA), (T)
- Digital Character Animation (MA), (T)	- Applied Digital Media (Enterprise) (MA), (T)	- Applied Digital Media (MA), (T)
- Applied Digital Media (E-learning) (MA), (T)	- Digital Animation, Sound & Visual Media (MA), (T)	- Creative Digital Media (MA), (T)
- Multimedia Journalism Professional Practice (BA), (T)	- Enterprise in the Creative and Cultural Industries (MA), (T)	- Leadership in the Creative and Cultural Industries (MA), (T)
Logistics		
- Transport & Logistics (Fd), (M)	- Occupational Safety & Health, (M)	- Renewable Energy (Fd), (H)
- Diploma in Operations Management, (D)	- Project Control (Fd), (D)	- Diploma in Quality, (D)
- Foundation Diploma in Purchasing and Supply, (D)	- Effective Team Building, Coaching and Mentoring (20 credits) (H, S, D)	- CMI Diploma in Programme & Project Management, (D)
- NEBOSH National Diploma, (M)	- Diploma in Purchasing and Supply, (D)	- Business Management (Fd), (M, D, T)
- IT Subjects (UCPD), (H, D, S)	- HNC Manufacturing Engineering, (H, D)	- Advanced Professional Certificate

		in Management Studies, (M, H, D)
- Mechanical Engineering (BEng) (T)	- Leadership & Organisational Change Management (MSc), (T)	- Business Management (BEng) (T)
The Process Industries		
- HNC Instrumentation & Control (M)	- Chemical Technology (Fd), (R, T)	- HNC Manufacturing Engineering, (D)
- HNC Mechanical Engineering, (D, R, M)	- Engineering Subjects (UCPD), (D)	- Renewable Energy (Fd), (H)
- NEBOSH National Diploma, (M)	- Occupational Safety & Health, (M)	- IT Subjects (UCAPD), (H, D, S)
- HNC Electrical and Electronic Engineering (M, H, R, D)	- Applied Chemistry (BSc) (T)	- Chemical Engineering (BEng) (T)
- Biotechnology (MSc), (T)	- Petroleum Technology Management (MSc), (T)	- Analytical Chemistry (MSc), (T)
Energy		
- Renewable Energy (Fd), (H)	- NEBOSH National Diploma, (M)	- Occupational Safety & Health, (M)
- IT Subjects (UCAPD), (H, D, S)	- Engineering Design (Fd), (D)	- Business Management (Fd), (M, D)
- Advanced Professional Certificate in Management Studies, (M, H, D)	- HNC Electrical and Electronic Engineering (M, H, R, D)	- Chemical Technology (Fd), (R, T)
- Applied Chemistry (BSc) (T)	- Control & Electronics (MSc), (T)	- Project Management (MSc), (T)
- Environmental Technology (MSc), (T)	- Electrical & Electronic Engineering (BEng) (T)	- Management (MSc), (T)
Advanced Engineering		
- Diploma in Quality, (D)	- Engineering Design Mechanical (Fd)	- Engineering Design (Fd), (D)
- Manufacturing Engineering (HNC), (D, T)	- Project Control (Fd), (D)	- HNC Engineering, (R)
- Engineering Subjects (UCPD), (D)	- HNC Electrical & Electronic Engineering (M, H, R, D)	- Engineering Design Electronics (Fd), (D)
- Chemical Engineering (BEng) (T)	- Civil Engineering (BEng) (T)	-
- Electrical and Electronic Engineering (BEng) (T)	- Instrumentation & Control Engineering (BEng) (T)	- Mechanical Engineering (BEng) (T)
- Applied Chemistry (BSc) (T)	- Computer Aided Design (BEng) (T)	- Civil Engineering (MSc), (T)
- Engineering Design (Fd), (T)	- Manufacturing Maintenance Eng (Fd), (T)	- Management (MSc), (T)
-	- Intro to Operational Improvements (UCPD), (T)	- Project Management (MSc), (T)
- Plant & process Engineering (HNC), (T)	- Advanced Manufacturing Systems (MSc), (T)	- Civil Engineering (MSc), (T)
- Computer Aided Engineering (MSc), (T)	- 3D Plant Engineering Design & Modelling (UCPD), (T)	- Computer Aided Engineering (MSc), (T)

- Control & Electronics (MSc), (T)	- Electronics & Communications (MSc), (T)	- Process Manufacturing Management (MSc), (T)
Crossing Sectors		
- Business Management (Fd), (M, D)	- Diploma in Management (ILM), (R)	- Diploma in Management, (D, S, R)
- Advanced Professional Certificate in Management Studies, (M, H, D)	- Professional Certificate in Management Studies, (M, H, D)	- Executive Diploma in Management, (R, S)
- CMI Diploma in Leadership & Management, (D)	- Strategic Diploma in Leadership & Management, (D)	- Diploma in Programme and Project Management, (D)
- CMI Diploma in Strategic Management, (D)	- Leadership & Management (CIPD), (S)	- Leadership & Management (Fd), (H)
- Personal Development, Leadership & Managing Change, (H)	- Effective Team Building, Coaching and Mentoring (20 credits) (H, S, D)	- Teamwork Mentoring & Coaching (20 credits), (R)
- Managing People (20 credits), (R)	Professional Diploma in Marketing, (D)	- Managing Others, (S)
- Managing Self, (S)	- Effective Team Building (20 credits), (R)	- Coaching & Feedback (20 credits), (R)
- Professional Certificate in Marketing, (D)	- PG Diploma in Marketing, (D)	- Business Management (Fd) (T)
- Head Start to Business, (R)	- The Role of The Supervisor (20 credits), (R)	- IT Applications, (R)
- Computing (Fd), (S, D)	- IT Subjects (UCPD), (H, D, S)	- IT Subjects (UCAPD), (H, D, S)
- Engineering Design (Fd), (D)	- Engineering Subjects (UCPD), (D)	- Engineering (Fd), (H)
- HNC Manufacturing Engineering, (H, D, T)	- Engineering Design Electronics (Fd), (D)	- HNC Engineering, (R)
- HNC Mechanical Engineering, (D, R, M, T)	- HNC Instrumentation & Control, (M),	- HNC Mechatronics (D),
- Make Your Learning Count (20 credits), (S)	- NEBOSH National Diploma, (M)	- Occupational Safety & Health, (M)
- HNC Electrical and Electronic Engineering (M, H, R, D)	- Masters in Business Administration, (T)	- PG Certificate in Management, (T)
- Workbased Studies (BA/BSc/MA/MSc) (T)	- Leadership & Management (Fd) (T)	

Appendix 5: Account Management at Teesside University

Teesside University are one of the first in the HE sector to recruit a team of Account Managers to lead the development and maintenance of high quality, long term relationships with employers. Working across all of the academic schools and areas of expertise the Account Managers establish and maintain good customer rapport and ensure that employer expectations are met. They provide a valuable source of information (in both directions) which shapes service and course design and are focused on helping to devise a whole business solution for employers.

The benefits of professional account management to businesses?

- Saves time – simplifies finding and choosing courses or services
- Facilitates communication - between all the relevant parties
- Coordinates project management - makes things happen at the right time
- Involves customers – who can then influence HE level activities

And for the university?

- Extra capacity – through engaging with employers and employees
- Stronger collaboration – internally and externally – many business solutions involve more than one university school/department
- Progression routes – pathways are clearly pointed out

Some examples of new products emerging from the School of Arts and Media's Account Manager's engagement with employers in their sectors:

Film Editing with an Apple Authorised Training Centre

Teesside University recently became an Apple Authorised Training Centre. Courses are now offered in Final Cut Pro, which is the industry standard video editing package used by many professional TV and film editors. The course leads to an Apple accredited Final Cut Pro 7 Level 1 certificate and 20 University credits, which can count towards further study such as foundation degrees or degree courses. Version 7 provides integration with Apple's other Pro applications, with improved codec support for editing HD, DV and SD video formats.

Professional Training in Video Journalism

The video journalism course responds to the changing roles of the conventional print journalist. It is equally suited to anyone who wishes to shoot, edit and upload high quality video content onto their business website; covering camera techniques, editing, interview skills, filming and uploading files to the Internet.

Appendix 6: Accreditation of Prior Learning (APL) – Some Key Points

- HE level learning carries academic credit – for example, a module may be worth 20 credits – this builds towards various awards – with 360 credits required across levels 4,5 & 6 to obtain an honours degree
- APL is a process (used widely across the HE sector in the UK and abroad) which means that HE credit can be granted for learning that has already taken place elsewhere – providing it can be assessed
- This credit is split into two categories – ‘general’ which may apply to a wide variety of programmes, and ‘specific’ which is more narrowly defined to be measured against a very particular module or outcome – APL results in the award of both of these ‘types’
- It is a time-saving, empowering device - time-saving because if something has already been learned in the workplace (and can be evidenced) it will not be repeated as part of the HE course - and empowering because it helps students to see the complexities and challenges of their work role
- There are two distinct types of APL:
 - Accreditation of Prior Certificated Learning (APCL) for ‘**C**ertificated’ learning – i.e. other relevant HE level awards
 - Accreditation of Prior Experiential Learning (APEL) for ‘**E**xperiential’ learning – i.e. workplace learning experiences and development activities
- APL is useful for those who have not had the opportunity to attend an HEI in the past, but have amassed important knowledge, expertise, skills and rich hands-on experience from other sources which can be measured against higher level standards
- APL is flexible – it is about equivalence – not being exactly the same
- APL can be used in one of two ways: for the purposes of admission *onto* HE programmes, instead of the more standard entry requirements, such as ‘A’ levels; or for the purposes of gaining academic credit *towards* a named award, which offers advanced standing
- If APL is to be used as part of the admissions procedure the student may well have to raise the issue; if APL is used as an intrinsic part of a programme there is often a module dedicated to how to get the most from the process – typically called something like ‘Make Your Learning Count’
- Work-Based Learning students frequently state that without APL, they would never have gained their HE qualification

Appendix 7: Examples of Good Practice

Food for thought as company cuts energy bills

A County Durham food company was able to make significant energy savings after a review by University experts.

Adam Stewart, from Redcar, spent six months working with International Cuisine, in Consett, north Durham, which employs 550 people and is part of the Daniels Group.

As a result of Adam's work, the company, which makes more than a million chilled meals a week, was able to identify measures to reduce its energy consumption by up to ten percent.

Specialist expertise

Adam was recruited to a One NorthEast funded Collaborative Innovation Partnership (CIP) utilising the specialist expertise of the University's Clean Environment Management Centre (CLEMANCE), which advises companies on ways of reducing their impact on the environment.



Adam's project was based on carrying out a full audit of the factory's energy usage to identify ways by which it could be reduced and supporting the company in achieving Carbon Trust Accreditation.

Adam, who is completing his MSc in Environmental Technology said: 'International Cuisine was already operating in a very efficient way but the work we have done showed that even companies that were already efficient can make further, extremely significant, improvements.'

These improvements included the simple step of keeping doors closed during warm summer weather, because leaving them open makes the refrigeration units work harder to maintain the best conditions for stored food.

Adam added: 'Once we discovered the effect that leaving the doors open was having on the refrigeration units, we were able to make the staff aware of the amount of energy that was being wasted.'

'We were also able to explain that making economies benefited them directly. If energy is wasted, a company wastes money and that hits its viability and, in turn, people's pay packets.'

Cut energy usage

Other recommendations included a more efficient use of blast-chillers, used to cool food down quickly, better ways of using boilers and compressors and more efficient ways of operating other equipment.

Tom Weldon, Site Operations Director at International Cuisine said: 'We would never have been able to achieve this ourselves without the invaluable support of Adam and Teesside University.'

Games technology helps the Real World

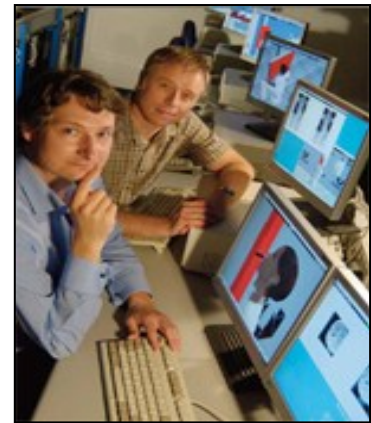
The idea that you can practise dangerous diagnostic techniques in a virtual 3-Dworld before being let loose on patients has long been an ambition of Philip Cosson. For training students to carry out procedures like X-rays safely has become a headache for lecturers in recent years since fewer and fewer patients are prepared to be treated by students.

Philip, a senior lecturer in medical imaging at the University of Teesside, said his interest was aroused in 2001 after a casual conversation on the way home from a conference. 'I remember saying wouldn't it be great if we could train radiographers using computer simulation', he recalled. 'After all, airline pilots learn to fly jumbo jets using simulators.'

Six years later – and after thousands of hours of difficult computer programming – Philip's University spin-out company, Shaderware Ltd, has now sold its first batch of software overseas. And radiography students at Teesside are privileged to be using the only virtual radiography training facility in the UK.

'Now we can do it, we are starting to discover simulation's great potential', he said. It couldn't have been done, he added, without the help of a series of master's students from the School of Computing who used the research as the basis of their projects.

The real breakthrough came when Neil Willis, a graduate from the MSc Computer Animation and Graphical Technology Applications, got involved. 'Most students on my course were interested in computer gaming, or perhaps the film world, but that wasn't my focus', said Neil, pictured with Philip.



'I was interested in the more scientific applications and, after speaking to Phil, I helped him realise his vision of creating a virtual training environment for radiographers.'

But it was a big challenge since Neil had to simulate real-time moving images at a rate of 30 times per second – much faster than anything being offered by any existing technology. A human body had previously been scanned and photographed in the US and this data was used in the software to simulate a patient so that students can look at an X-ray room, move the patient and equipment around, and take a 'real' or virtual X-ray.

The project went on to win a British Computer Society prize and Neil was keen to develop what had been an academic exercise into a commercial product.

Grants from the University of Teesside Enterprise Development Fund and DigitalCity helped, and work on the project continued until the company was launched. 'I was very driven, probably because I was a mature student and had given up a lot to do this', Neil explained. Philip is optimistic. 'On-screen simulation can't replace clinical experience but it does give students a very controlled and safe environment in which to develop their skills. And of course with a simulation we can expose students to rarer situations than they are likely to see on any of their clinical placements.'

Partnership bears fruit for Company of the Year

An academic partnership with the University has been a success for Wellstream - Company of the Year.

The success of Wellstream was hailed as 'evidence that the region's manufacturing industry can still lead the world' when the Tyneside oil and gas pipeline maker carried off the prestigious Company of the Year prize.

The Tyneside-based company floated on the Stock Exchange with a market capitalisation of more than £300m earlier this year. At the North East Business Awards Wellstream was praised for 'its innovative designs, strong business model, technological excellence and success in building its business'.



Wellstream sought help from the University

Dr Ahmed Abbas, head of the University's Teesside Manufacturing Centre (TMC) based in the School of Science & Engineering, recalls the first contact with Wellstream. He said, 'They were growing fast and wanted to improve their business and management systems across the board to allow for expansion. They were gaining clients all over the world.

After a presentation to the board, and a visit to a number of our former clients to check us out, Wellstream asked us to do a major enterprise-wide review.'

Wellstream asked TMC to help select what it needed in terms of hardware, software and training. As well as identifying possible suppliers, TMC also helped choose the successful system. One of the team, Suhail Aslam - a graduate from Teesside - was also seconded to Wellstream as project manager.

This partnership received financial support from the Knowledge Transfer Partnerships programme (KTP). KTP aims to help businesses to improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the UK knowledge base. KTP is funded by the Technology Strategy Board along with the other government funding organisations.

Wellstream and the University have now strengthened their partnership by appointing two KTP associates. The associates are concerned with implementing enterprise-wide changes across the whole organisation, including the introduction of a new Enterprise Resource Planning (ERP) system.

A partnership that benefits both

Dr Abbas is keen to stress that it's a partnership that benefits both. He said, 'We're not just there to help the company, but working so closely with a company like Wellstream really helps our teaching and research.'

Chris Pickering, Wellstream's supply chain manager, agrees. He said, 'We're delighted to have the two KTPs on board. This is part of our overall programme to implement our new ERP system - the engine that drives the business. The University has been our partner for two-and-a-half years and during this period our relationship has been very good. They have steered us through the assessment and selection process and we believe we've ended up with the best system to meet our needs, which is making bespoke flexible pipe products for the oil and gas industry.'

Appliance of science for chemical sector

A new science collaboration for the chemical industry is to bridge the development gap between research and the prototyping of products and services.



Linchem's Terence Cox flanked by the University's Professor Zulfiquir Ali (right) and Nitin Seetohul.

Our 'Science to business hub' is to help over 100 small local businesses to gain a competitive edge in product development by opening up innovative relationships with academic institutions and research establishments.

Focus on the speciality chemicals sector

With a focus on the speciality chemicals sector, a £1.27m investment from the University is being match funded with £1.17m from the European Regional Development Fund 2007-13 administered by One North East.

The project will link with two similar projects run by CPI and NEPIC, increasing opportunities for SMEs to tap into the latest sector research, share best practice and network more effectively.

Professor Cliff Hardcastle, Deputy Vice-Chancellor for Research and Enterprise

said: 'A key aim is to help our chemicals sector businesses identify their technology requirements and skills gaps, and then source partners from the universities, regional centres of excellence and research establishments to provide solutions.'

Speciality chemicals sector company Linchem has already seen the benefits of close collaboration with the University. Having recently filed a patent application with the UK Patent Office drawing on its joint work, Linchem plans to establish commercial viability in conjunction with a major international company in the oilfield sector.

'The Science to business hub will ideas and bring a culture change working between companies, exploit new opportunities and build alliances,' added One North East Chief Executive Alan Clarke.



Project part-financed
by the European Union

European Regional
Development Fund 2007 - 13

generate innovative
to facilitate open
enabling them to



'Regional investment in R&D must pick up and this project is a great chance to increase the number of SMEs engaged in active innovation and collaborative research to move their business forward.'

North East Higher Skills Pathfinder Case Study - Protein Boost for Training

Partners

Durham University and Avecia Biologics

In a nutshell

The Advanced Protein Training (APT) programme is a bespoke Continuing Professional Development Course designed for individual staff development needs in the biotechnology and pharmaceuticals industry focusing on the theory and practices of protein isolation and analysis.



The project

The APT programme was a response to a continued need for quality control and to conform to strict regulations; the fast changing pace of technologies and a desire to improve learners' abilities to be more competitive in the marketplace. The course lasts for two days and takes place onsite at Durham University where students have access to a state of the art laboratory and exposure to new,

cutting edge technologies.

The programme is developed and delivered by experienced scientists and research staff. Delivered to a highly professional standard throughout, learners experience practical hands-on training, laboratory demonstrations and meet with experts experienced in many aspects of protein technology.

Fundamental to the design of the programme is the bespoke nature of the courses. The ability to tailor the programme in discussion with the course director ensures that the course contents are 'fit for purpose' and meet specific the specific needs of both the company and individual learner.

Employer benefits

- Intensive, bespoke course with very specific areas of expertise
- Small numbers of learners, usually limited to 15
- Suitable for a diverse range of post graduate learners from technical staff through to research managers
- Unique, practical, hands on experience
- Improved trouble shooting on the job
- Improved quality control in the industry
- Improved ability to keep pace with fast changing technologies
- Improved higher skills and more competitive employees

Appendix 8: Sector Skills Councils

Cogent	
Industries represented	Chemical manufacture, nuclear, upstream oil and gas extraction, downstream oil and polymers
No. of employers (UK)	18,500
No. of employers (NE)	800
No. of employees (UK)	432,700
No. of employees (NE)	24,700
Contribution to the economy (UK)	£49bn
Contribution to the economy (NE)	£1.7bn (7%)
GVA per employee (UK)	£98,394
GVA per employee (NE)	£68,857

SEMTA	
Industries represented	Aerospace, automotive, bioscience, electrical, electronics, maintenance, marine, mathematics, mechanical, metals and engineered metal products
No. of employers (UK)	65,000
No. of employees (UK)	1.1million
No. of employers (NE)	2,310
No. of employees (NE)	63,200
Contribution to the economy (UK)	
Contribution to the economy (NE)	12%
GVA per employee (UK)	£47,000
GVA per employee (NE)	£48,000

EU Skills	
Industries represented	Electricity, upstream gas, downstream gas, waste management and water
No. of employers (UK)	60,500
No. of employees (UK)	536,200
No. of employers (NE)	2,080
No. of employees (NE)	28,100
Contribution to the economy (UK)	c. £19billion
Contribution to the economy (NE)	Not available
GVA per employee (UK)	Not available
GVA per employee (NE)	Not available

Skills for Logistics	
Industries represented	Moving, handling or storing of goods in relation to road, rail, air, deep sea, short sea and waterways.
No. of employers (UK)	196,000
No. of employers (NE)	2,300,000
No. of employers (NE)	5,200
No. of employees (NE)	55,000
Contribution to the economy (UK)	Not available
Contribution to the economy (NE)	Not available
GVA per employee (UK)	Not available
GVA per employee (NE)	Not available
% of regional workforce	7%

Skillset	
Industries represented	Creative media (animation, computer games, film, interactive media, other content creation, photo imaging, publishing, radio and TV)
No. of employers (UK)	15,695
No. of employers (NE)	500
No. of employees (UK)	484,200
No. of employees (NE)	3,000
Contribution to the economy (UK)	Not available
Contribution to the economy (NE)	Not available
GVA per employee (UK)	Not available
GVA per employee (NE)	Not available

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